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Institute Directors Pledge Cordial Help To U. S. Oil Conservation Board

By Warren C. Platt

ATLANTIC CITY, N. J., Jan. 12 CORDIAL cooperation of the American Petroleum Institute with President Coolidge and his recently appointed commission to investigate the conservation of petroleum, was voted by the institute board of directors today at one of the largest meetings in its history.

Following adoption of this resolution the directors devoted the afternoon and evening to hearing first H. L. Doherty head of the Cities Service Co. present his ideas on conservation in full and then A. L. Beaty, president of The Texas Co., discuss them and also his own ideas for limiting drilling to fair-sized acreage. Only the directors and a few associates of the directors who were here heard the discussion and the details of it were not given out by the board.

Mr. Doherty added no new ideas to the several public addresses he has made on this subject, in which he also included his ideas on greater utilization of oil in domestic burners. He demonstrated his burner after the afternoon session in the basement of the Hotel Traymore where the meeting was held. Mr. Beaty went over much the same ground he did at the institute's meeting at Fort Worth last month.

There was considerable discussion of both addresses but no action was taken as the subject matter goes to the special committee of 11 members of the institute which was likewise authorized today to have charge of the collecting of data from the whole oil industry on conservation and presenting it to the government. This committee is to be the industry's point of contact with the government.

The government's move to conservation was the chief subject of discussion around the lobby. But the opinion was expressed by every one that President Coolidge was proceeding in a most fair and conservative manner in forming such an excellent commission and having it get in touch with the oil industry first in its investigation.

There is no disguising the fact that the oil men are fearful of what the move may eventuate in when it gets before congress, not so much in the immediate future as what it may grow into in years to come. But the opinion was general that the industry should cooperate with the government sincerely, frankly and expeditiously. Leading oil executives emphasized the opportunity the industry has of giving a sincerity of cooperation with the government such as it has never had before.

While the letter which the government's commission addressed to the oil industry today asks for much information which bears on conservation, it is felt that the industry will have to go much further into all those questions and into many others before an intelligent opinion can be arrived at either by the industry or by the commission.

Presumably there will be no proposals submitted to congress until the session a year from now but even that, it is felt, at best may be only of the most preliminary kind. Directors expressed great doubt as to just how to go about tackling the subject.

The board's resolution, which was proposed by A. C. Bedford, follows:

The Resolution

"Whereas, the president of the United States on Dec. 19, 1924, created a federal oil conservation board consisting of the secretaries of war, navy, interior and commerce to study the government's responsibility with regard to the conservation of oil and enlist the cooperation of representatives of the oil industry in its investigation, and

"Whereas, the American Petroleum Institute wishes to record its approval of the principle of cooperation between government and industry, and its desire to cooperate with the conservation board, and

"Whereas, a full and intelligent discussion of the problems involved and

(Continued on page 24)

Bulletin

ATLANTIC CITY N. J., Jan. 13.—A principal event of today's meeting of the American Petroleum Institute directors was the disapproval of the Doherty plan for regulating production of oil. This has been given wide publicity in recent months. An extended discussion of the plan was held today at the conclusion of which the directors went on record against it and agreed with a motion by E. W. Mariand to appoint a special committee to draft a resolution of disapproval. This resolution, it is understood, will emphasize the statements made by a number of the directors that there is no such waste in the oil industry as has been indicated in newspaper publicity and some addresses of recent date.

The directors today named the committee which will work with the federal oil conservation board, in line with the resolution adopted yesterday. The committee consists of J. Edgar Pew, Sun Oil Co.; R. L. Welch, secretary American Petroleum Institute; K. R. Kingsbury, Standard Oil Co. of California; W. S. Farish, Humble Oil & Refining Co; E. W. Marland, Marland Oil Co.; D. M. Folsom, General Petroleum Corp.; W. N. Davis, Mid-Continent Oil & Gas Ass'n.; George S. Davison, Gulf Oil Corp.; J. C. Donnell, Ohio Oil Co.; E. T. Wilson, Mutual Oil Co.; Frank Haskell, Tide Water Oil Co.

National Petroleum News

Compilation Of Mid-Continent Refinery Operations

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Mid-Continent Refiners Again Lower Gas, Fuel And Kerosene Stocks

By J. C. Chatfield

STAFF REPRESENTATIVE

TULSA, Jan. 12

AIDED by more normal winter weather conditions Mid-Continent refiners were able to increase their shipments of all products during the week ended Jan. 9, according to the National Petroleum News survey of 117 plants with still capacity of 435,000 barrels.

Shipments of gas and fuel oil were 5,000,000 gallons greater than during the week ended Jan. 2. Gasoline shipments were increased 2,300,000 gallons and kerosene shipments were over 200,000 gallons larger.

Although refiners in all states except Oklahoma increased their crude runs above the low mark set the week before stocks of gas and fuel oils and kerosene were reduced substantially and gasoline stocks increased less than 3,000,000 gallons. In Kansas 21 refiners increased their still charges 3000 barrels per day to 61,832 barrels or 62 per cent of their rated capacity of 95,700 barrels.

In Texas 38 plants increased their runs 13,000 barrels per day to 76,745 barrels and in north Louisiana-Arkansas 14 plants increased their runs nearly 3000 barrels per day. Oklahoma refiners cut their runs 1300 barrels per day.

Fuel and gas oil which are now bringing higher prices than at any time in the past two years in the Mid-Continent continued to move at heavy rate from refineries in the area. With the exception of Louisiana and Arkansas which reported an extremely heavy movement last week all groups increased their sales of fuel. Kansas shipments increased 4.4 per cent, Oklahoma 36.2 per cent, and north and central Texas 36.2 per cent. Stocks were reduced 100,000 gallons in Kansas, nearly 2,000,000 gallons in Oklahoma, 1,000,000 gallons in Texas and 400,000 gallons in Louisiana-Arkansas. The entire group increased production 4,000,000 gallons to 36,944,758 gallons and shipments increased 5,000,000 gallons to 39,881,914 gallons.

Kerosene moved in a livelier manner during the week and stocks were reduced in all states. Kansas plants cut their burning oil inventories 700,000 gallons to 3,206,156 gallons. Oklahoma refiners shipped 400,000 gallons more than they produced cutting stocks to 9,905,277 gallons and Texas plants reduced their stocks more than 100,000 gallons. In Louisiana and Arkansas the stock reduction was 100,000 gallons to a low point of 628,402 gallons.

While shipments of gasoline from all plants were increased 6 per cent to 22,725,856 gallons, production was increased 6.8 per cent to 25,231,173 gallons and stocks were increased 2,500,000 gallons to 61,512,144 gallons.

At the rate of shipments maintained during the week gasoline stocks in the hands of the 117 plants from which reports were obtained represented 19 days' supply. Kerosene stocks represented 17.7 days' supply and gas and fuel oil stocks 19 days' supply.

Tank Wagon Changes

TULSA, Jan. 13.—On Jan. 9 Magnolia Petroleum Co. reduced tank wagon price only of gasoline 1 cent at Fort Worth to 10 cents.

SHREVEPORT Jan. 10.—The Shreveport-El Dorado Pipe Line Co. on Jan. 5 announced to its connections that it had made a 25-cent increase in the price of El Dorado crude retroactive to Dec. 29. New prices of this company are $1.25 for 33 gravity and above and $1.15 for oil below 33 gravity.

The Mid-Continent Refinery Figures for Week Ended Jan. 9

	Kansas	%Change Previous Week	Oklahoma	%Change Previous Week	No. & Cent. Texas	%Change Previous Week	No.La.-Ark.	%Change Previous Week	Total	%Change Previous Week	Totals Week ended Dec. 5
No. of Plants	21		44		38		14		117		117
Da. Still Cap. (bbl.)	95,700		154,400		134,000		50,900		435,000		434,000
Da. Av. Crude Run.	50,270		85,888		66,315		29,366		231,839		226,974
Da. Av. Other Oils .	11,562		9,523		10,430		6,959		38,474		35,616
Da. Av. Total to Stills	61,832	+ 5.6	95,411	— 1.4	76,745	+21.6	36,325	+ 7.0	270,313	+ 6.9	262,590
GASOLINE—GALLONS											
Stocks Jan. 2	9,699,468		34,069,084		10,808,035		4,430,240		59,006,827		51,454,697
Prod. 1-2—1-9	6,675,692	+ 5.4	9,448,012	— 2.2	7,171,392	+19.8	1,936,077	+17.6	25,231,173	+ 6.8	24,955,801
Ship. 1-2—1-9	4,882,785	+ 5.4	9,247,699	+ 3.1	6,803,581	+ 5.6	1,791,791	+14.5	22,725,856	+ 6.0	25,842,363
Stocks 1-9	11,492,375	+18.2	34,269,397	+ 0.6	11,175,846	+ 3.4	4,574,526	+ 3.3	61,512,144	+ 4.2	60,568,135
Ratio Sales to Prod.	73.1%		97.8%		95.8%		92.5%		90.1%		103.6%
KEROSENE—GALLONS											
Stocks Jan. 2	3,902,969		10,321,780		5,518,291		743,032		20,486,072		22,682,605
Prod. 1-2—1-9	1,465,321	—14.1	2,179,312	+ 0.5	1,870,484	+ 4.7	662,084	+33.1	6,177,201	+ 0.4	6,631,025
Ship. 1-2—1-9	2,162,134	—30.0	2,595,815	+68.9	1,982,999	+ 3.4	776,714	+ 2.5	7,517,662	+ 2.9	8,182,481
Stocks 1-9	3,206,156	—17.9	9,905,277	— 4.0	5,405,776	— 2.0	628,402	—15.4	19,145,611	— 6.6	21,131,149
Ratio Sales to Prod.	147.6%		119.1%		106.0%		117.3%		121.7%		123.4%
GAS AND FUEL OILS—GALLONS											
Stocks Jan. 2	10,596,626		50,628,037		38,136,504		14,639,036		114,000,203		130,586,979
Prod. 1-2—1-9	6,616,069	+ 3.2	12,746,590	+16.6	11,054,897	+17.8	6,527,202	+ 4.9	36,944,758	+12.1	34,408,234
Ship. 1-2—1-9	6,723,493	+ 4.4	14,324,006	+36.2	11,924,967	+36.2	6,909,448	—24.1	39,881,914	+14.5	36,414,305
Stocks 1-9	10,489,202	— 1.0	49,050,621	— 3.1	37,266,434	— 2.3	14,256,790	— 2.6	111,063,047	— 2.6	128,580,908
Ratio Sales to Prod.	101.6%		112.4%		107.8%		105.8%		107.9%		105.8%

THIS WEEK'S MARKETS SUMMARIZED

Crude Production By Districts

OKLAHOMA

	Jan. 10	Jan. 3
Bristow	37,400	40,100
Burbank	59,190	60,225
Cushing	22,300	22,900
Cromwell	34,635	34,620
Healdton	15,500	15,200
Hewitt	16,450	16,840
Osage, except Burbank	38,000	38,250
Papoose	27,410	28,960
Tonkawa	95,899	96,900
Wewoka	11,000	12,100
Other Fields	115,250	116,700
Total	473,034	482,495
Decrease		9,461

KANSAS

Augusta-Douglass	3,500	3,100
Blankenship District	2,800	2,410
Elbing-Peabody	6,400	6,830
El Dorado	15,200	15,425
Fox-Bush	2,900	2,860
Greenwood County	25,700	25,230
Other Fields	28,200	28,500
Total	84,700	84,355
Increase		345

NORTH LOUISIANA—ARKANSAS

Daily Average	Jan. 8	Jan. 2
Caddo, light	9,500	9,012
Caddo, heavy	2,325	2,284
De Soto-Red River	4,985	4,996
Homer	6,920	6,965
Haynesville	15,410	15,260
Bellevue	3,148	3,576
Cotton Valley	5,690	5,695
El Dorado	10,410	10,412
Smackover, light	32,340	27,912
Smackover, heavy	63,605	65,520
Stephens	2,090	1,910
Nevada county	1,080	1,120
Total	157,503	154,662
Increase		2,841

Marketing

Marketing News pages 97-110

Oklahoma-Kansas.—Gasoline stronger because of heavy export buying. Fuel oil active, prices highest since 1922. Kerosene stronger. Distillates easier as oil scarce and high. Lubes quiet. Waxes strong.

North Texas.—Kerosene and distillate prices advancing. Supplies scarce. Little gas oil available. Fuel oil prices stiffer because of heavy buying of railroads and industrial users. Refiners sold up on gasoline over January.

Chicago.—Gasoline firmer because of export buying in Mid-Continent. Kerosene slow, price maintained by good demand for stove distillate. Furnace oil easier. Gas oil firm. Fuel oil strong.

Pennsylvania.—Big companies buying steam stocks, market firmer. Kerosene improving. Fuel oil scarce and strong. Neutrals strong. Wax stronger. Gasoline quiet but prices holding up well.

Gulf Coastal.—Slow, prices steady.

California.—Gasoline price cutting diminishing. Fuel oil demand good, prices steady.

New York Export.—More interest in gasoline and kerosene. Both are stronger. Case goods moving better. Bunker oil strong. Diesel oil improving. Lubes firmer. Gas oil dull.

New Orleans Export.—Heavy buying of gasoline and kerosene. Gasoline prices higher. Kerosene prices steadier. Lubes stronger; two cargoes sold. Wax improving. Bunker oil strong. Gas oil slow but prices steady.

Production Summary

Eastern	98,000	100,000
Total U. S.	1,985,082	1,917,107
Increase		67,975

TEXAS AND COASTAL LOUISIANA

	Jan. 10	Jan. 3
Mexia, Currie Richland	39,865	41,500
Wortham	128,865	68,850
Corsicana, Powell	60,300	60,800
Wichita Falls Dist	77,160	72,490
Ranger, lime	26,600	26,500
Ranger, sand*	9,900	9,285
West Texas: Reagan, Mitchell, Scurry counties	11,200	10,540
Panhandle	1,000	1,095
San Antonio, Luling, Mirando	48,570	51,400
Coastal Texas	67,955	63,940
Coastal Louisiana	7,855	7,920
Total	480,270	414,320
Increase		65,950

*Includes Young, Shackleford, Palo Pinto, Brown, Coleman and Callahan counties.

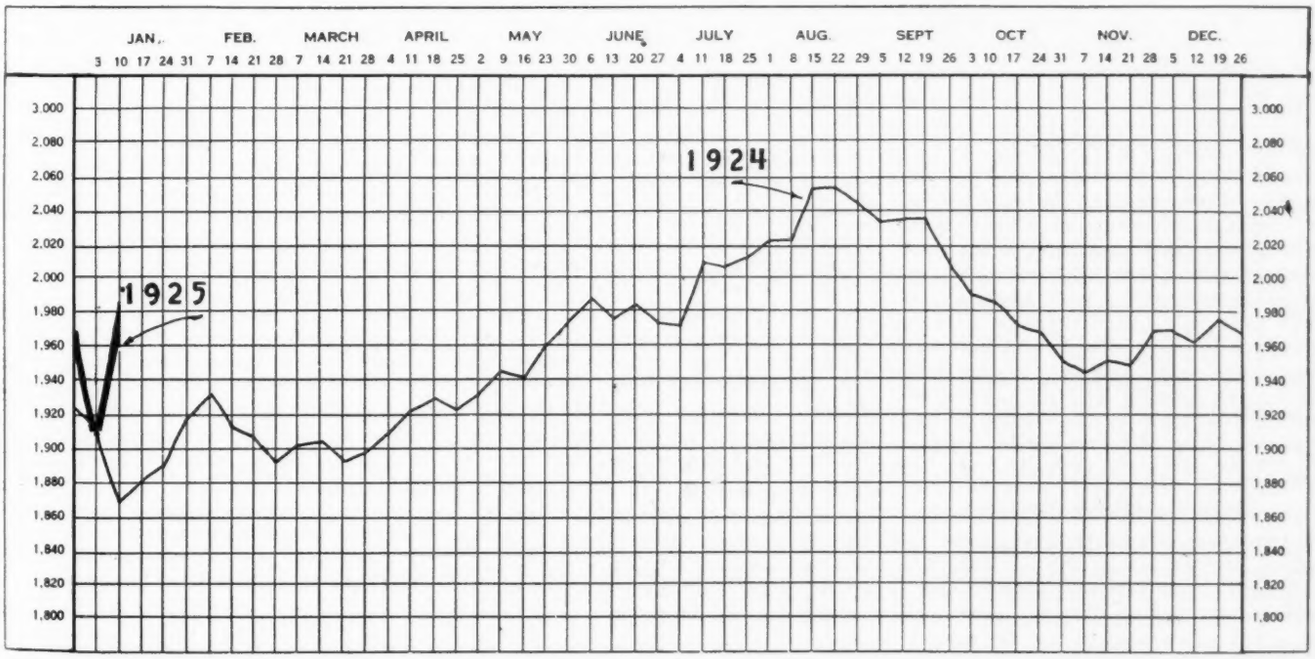
ROCKY MOUNTAIN DISTRICT

Fields	Jan. 10	Jan. 3
Salt Creek	53,200	45,470
Teapot	2,350	1,380
Big Muddy	3,045	2,485
Grass Creek	2,070	2,420
Elk Basin	690	645
Greybull, etc	75	70
Rock River	2,815	2,800
Lance Creek	850	880
Poison Spider	225	230
Osage	350	345
Hamilton Dome	675	490
Lander	290	225
Pilot Butte	35	30
Lost Soldier	5,450	4,190
Ferris	110	115
Craig	875	1,000
Fort Collins	750	700
Florence	225	215
Cat Creek	3,365	2,900
Kevin-Sunburst	3,150	2,235
Miscellaneous	500	450
Totals	81,075	69,275

CALIFORNIA

Long Beach	123,000	124,000
Santa Fe Springs	51,500	51,000
Torrance	44,000	44,000
Huntington Beach	41,500	41,000
Dominguez	61,000	60,000
Rest of state	289,500	292,000
Total	610,500	612,000
Decrease		1,500

Watch the Trend of the Week's Production



Federal Conservation Board Names Technical Sub-Committee

By A. E. Heiss
STAFF REPRESENTATIVE

WASHINGTON, Jan. 12

THE Federal Oil Conservation Board has begun to function. In less than a month, it has been estimated, leaders in the oil industry will have been invited to attend conferences in Washington. The board organized Jan. 7 by selecting Secretary Work of the Interior Department to be chairman. It has also selected Edward S. Rochester, former city editor of the Washington Post, later special assistant to the attorney general, to be its secretary.

While this organizing work was going on the Senate committee on appropriations inserted an item of $50,000 for the benefit of the board in a pending deficiency appropriation bill. That means that the board will have, as its first allowance $50,000 to spend on the work.

The members of the board will not do the actual work of conferring and drawing up recommendations. That will be done by a sub-board composed of a representative of the departments, the heads of which constitute the board. That subordinate body is composed of Dr. George Otis Smith, director of the Geological Survey; Guy C. Riddell, chief of the commerce department's bureau of minerals; Brigadier General Edgar Jadwin, assistant chief of the corps of engineers of the army; and Rear Admiral Harry Harwood Rosseau, receiver for the government in the government's suit to recover the leased naval oil reserves. The subordinate body is called, in the ordinary talk about it, a body of experts. They are experts from the point of view of government officials who have no technical knowledge of the subject and possibly only hazy general motions.

Dr. Smith has long been in the Geological Survey. He has become known on account of his utterances on the subject of conservation. General Jadwin has been in the army for 30-odd years. Having had much experience in the work of improving rivers and harbors, he has been much in touch with business and with civilians so that he is not so technically military as officers who have had experience only as officers in command of troops. Admiral Rosseau had had experience with oil in the fueling of the navy and the effort to retain reserves for the navy in the ground.

Riddell a Mining Engineer

A graduate of the Massachussetts Institute of Technology, class of 1904, Mr. Riddell has not only a technical training but he has had engineering experience that has taken him to the far east, to Australia and to the oil fields of Wyoming. He is a mining and metallurgical engineer, with a training so far as his school is concerned that needs no description to educated men. For six years after his graduation he was a chemist for the American Smelting & Refining Co. (Guggenheim), and superintendent of a lead smelting plant from 1910 to 1916. In the last mentioned year he went, as a consulting engineer to Honan province in China and a year later to Australia where he helped reorganize the Broken Hills Associated Smelters.

In 1919 and 1920 he was in the Wyoming oil fields for the Washington-Wyomass Oil Co. and the Rocky Mountain Oil and Refining company. In 1921 he was the head of the metals division of the United States Tariff Commission. In 1923 he was the consulting engineer and secretary of the Wah Chang Trading Corp. His experience in Washington, except for his short service with the tariff commission, began about six months ago in the place he now holds.

Apparently sensing that the oil industry has long been suspicious of government activities the first effort of all those connected with this latest move, that would talk at all, undertook to dispel the notion that what the board was undertaking was another government investigation. In other words, apparently, the board and its sub-committee hope the industry will not believe there is to be another eruption of LaFollettism in any of its phases, including the Walsh of Montana phase.

That the board is particularly anxious to avoid any suspicion that this is merely to be another muck-raking exhibition, the reporter for the Associated Press, who probably does not know of the attitude of the industry toward Congress, in writing his story about the board meeting on Jan. 7 said:

"Announcing that it would send a letter of inquiry to oil industry leaders to open the way for a free exchange of views, the sub-committee (headed by Dr. Smith) made it clear that a government investigation was not contemplated, but rather a co-operative study was planned in which the industry must furnish the larger share of facts with suggestions for remedial action to save the waning petroleum reserves."

A maximum of industry control with a minimum of government control, it was more than once suggested, during the talk immediately after the meeting of the board and the sub-board or sub-committee, would be the ideal of the representatives of the government concerned in this latest move. That is the ideal of Federal Trade Commissioner Gaskill, the one member of that body in whom the business world seems to have confidence.

Personnel is Sensible

Were it necessary to characterize the composition of the board, it would be within the bounds of reason to say it is conservative; that is to say it would not approve change for the sake of change but an array of facts as would satisfy the rule of law that he who proposes something has the burden, not only of proving his case but also the burden of going forward; that is to be the first to lay on the table facts in support of his proposition. It would not be out of the way to suggest that, in the final analysis, Secretary Hoover, in case of any disagreement in the board or the so-called sub-committee, would be the man to bring forward the idea that would prevail.

Getting the discussion down to a more concrete basis, it may be said that, at times Dr. Smith, possibly in the enthusiasm of rhetoric of which he is a master, has said things or approved things emanating from men in the Geological Survey that have not set well with men in the industry. The composition of the board and the sub-committee is such it is deemed extremely doubtful whether, even if Dr. Smith were to advocate propositions that would not commend themselves to the leading men in the industry, they would be adopted. In blunt terms it is deemed unlikely that what have been euphemistically called "rabid conservation views" would be approved by the board, were any one to suggest such.

The thought that radical conservationists might have a great weight with the board was suggested by a news story given out by the Interior Department soon after the board organized because it contained the declaration, among others that "government experts who have studied the oil problem in all its ramifications have estimated" that under named conditions "an oil famine would result," one of the conditions being that if no new fields were discovered for two years there would be such a famine, regardless of the fact that old fields are being brought to larger production, and that much of the crude that could be used to better advantage, is now being burnt to generate steam and in the making of roads, not to mention only few attempts to reclaim used lubricating oil.

Among the criticisms of the extreme conservationists has been that they set

up straw men to knock them down, as for instance the two-year period before the coming of the famine. It has been believed by more conservative men that the extreme conservationists, at times, have thought it good policy to "throw a scare" into the public and thereby sell their ideas to it as to what had to be done to achieve salvation. That news story was as follows:

Interior Department Statement

"Secretary Work outlined the purposes of the federal board, called attention to the view expressed by the President that 'it is evident that the present methods of capturing our oil deposits is wasteful to an alarming degree in that it has become impossible to conserve oil in the ground under our present leasing and royalty practices,' and suggested that the leaders of the oil industry throughout the country be invited to come to Washington for a conference with the board. This suggestion was subscribed to by the government experts and invitations will go out within a few days for a meeting early in February, which will be epochal in its importance to the oil industry and the government.

"Secretary Work further explained that the oil industry must largely determine its own future, adding that 'when its welfare is so closely linked with the industrial prosperity of the whole people, government and business might very properly join forces in working out this problem in practical conservation.' He called attention to the further statement by the President that 'it is even probable that the supremacy of nations may be determined by the possession of available petroleum and its products.' The potential oil supply of this country, he said, has been estimated to be approximately 9,000,000,000 barrels, and added that fully 750,000,000 barrels were taken from the ground during the past year.

Famine Question Raised

"Government experts who have studied the oil problem in all its ramifications, the Secretary of the Interior said, have estimated that 30 per cent of the oil now annually produced comes from new fields, and generally half of the total production from any field is produced within the first two years, which would seem to imply that 'if oil companies should fail over a period of two years to find, at home or abroad, new production to offset our depletion, an oil famine would result.' The United States produced 70 per cent of the world's consumption of oil, and an oil famine, the chairman said, would paralyze the industrial structure of the nation. Not only the government, but the industry itself, he added, must be adequately protected and if, out of the work of the federal board, a constructive and mutually helpful policy can be evolved, then the country and business generally will have been benefitted immeasurably.

"The secretary announced that the new board was fully in accord with the President that 'the problem of a future shortage in fuel and lubricating oil, not to mention gasoline, must be avoided, or our manufacturing productivity will be curtailed to an extent not easily calculated.'

"The oil industry, the chairman declared, is asked to help the government, and also itself, that both the government and the industry might properly be protected. The new board is desirous of having the oil-producing concerns of the country contribute to a lasting policy, he said, that would eliminate the present tremendous waste, that would assure greater efficiency in the usage of oil products, that would afford better transportation, distribution and refining methods.

Would Determine Cost

"Overproduction of oil is an acknowledged fact, and the board would like to determine, the chairman said, the cost of this overproduction to the industry.

"With the present day development of technique for finding oil and the production of oil at a rate never before attained, how can the 'brakes' be put on the 'bringing in' of new pools and unneeded production?

"What can be done in exploration of new pools or fields, without exploitation until market demands warrant new production?

"How can the government and the industry co-operate best in an effort to encourage the creation of drill-tested reserves to be opened only as needed? This would mean, Secretary Work explained, not conservation as some define the word, but simply delayed production rather than the wasteful production that has characterized the past two years—a flood of oil that washed away profits and depleted the nation's reserves.

"How can development be slowed down, on government lands and on privately owned lands, to meet only the actual demand?

"What does the present waste mean to the industry and to the nation, and what does the future offer unless there be some reform in the interest of all concerned?"

Why Was The Bureau Of Mines Ignored?

AFTER organizing by selecting Hubert Work, secretary of the interior as chairman, the president's oil conservation board named a sub-committee composed of technical representatives of the four cabinet members of the board. The technical bureau of the government which is best and most favorably known to the oil industry has been ignored.

The representative of the department of the interior is George Otis Smith, director of the U. S. Geological Survey. A worthy man and one representing a bureau which has discharged its duties in a manner above reproach or adverse criticism. But, we contend, it is not the department which can best give advice on the matter of conservation of oil and gas for the very simple reason that it knows less about it than does the Bureau of Mines. That it should be represented admits of no question, but not to the exclusion of the Bureau of Mines.

This latter branch of government service has had the intimate, personal experience with the oil industry that should be called upon to guide the federal government in the momentous movement it has undertaken. The Geological Survey has concerned itself, in a practical way, more with the appraisal of resources from a quantitative standpoint than from the standpoint of recovery and utilization.

The work of the Bureau of Mines is well known to all oil operators for practically every one of them has met at some time or other one of those alert engineers out in the field in quest of information that would result in betterment of production or refining practice. Their recommendations are received with respect, for they have established a reputation that entitles them to that respect. It is known that they can put out a gas well fire or bring a wild gasser under control and by that we mean they can and will take off their coats and make a full hand on the job of carrying out their own recommendations. They have studied the question of getting more oil out of the sands than can be obtained by ordinary practice and their studies have meant profits to everyone concerned. They have shown operators how to control water which threatened to end the life of a field. They are working all the time, helping to reduce costs and get more oil and this is true conservation.

The knowledge of a bureau containing men who know the problems an oil man contends with daily, certainly should be utilized in any attempt to set up a working policy. If there is a disposition on the part of Secretary Work to call upon the Bureau of Mines he has not made it plain.

That Secretary Work has ignored in a public way the branch of his department that knows most about the practices current in the oil industry is regrettable. It is not too late to do something about it and we hope he will tell us very soon, that the information the Bureau of Mines has gained first hand will be utilized. Both the Bureau and the Survey could be represented on the sub-committee, for the Department of the Interior should have greater representation than the other departments whose heads are members of the conservation board.—L. E. S.

Work Invites Opinions of Number Of Oil Men And Technologists

WASHINGTON, Jan. 12

SETTING out that the federal oil conservation board will solicit the views of oil men throughout the country, Hubert Work, secretary of the interior, made public today a letter which has been addressed to a number of operators and scientists. Secretary Work, who is chairman of the conservation board, made the letter public with the following statement.

"The first definite move on the part of the government's oil board to open up the way for a free exchange of views relative to what has been described as an alarming waste in the production of petroleum in this country and was taken today when the Secretary of the Interior Work, as chairman of the federal oil conservation board, addressed a letter to a score or more of the leaders of the oil industry inviting them to furnish the board with constructive suggestions for the best use of the nation's reserve oil and gas resources.

"In making public a copy of the letter sent to the oil industry, Secretary Work explained that the board was desirous of obtaining the views of the practical-minded leaders of the industry in order that there might be the fullest cooperation between the industry and the board appointed by the President in arriving at a public understanding if possible, of the present oil situation. The study of the petroleum industry, he added, has as its chief object the elimination of waste, and the board, consisting of Secretary Weeks, Secretary Wilbur, Secretary Hoover, and himself, feels that if greater efficiency and economy can be promoted in the industry the benefits will be equally enjoyed by the government and the industry.

"The chairman asserted further that the oil industry itself could best furnish the government board with an authoritative view of the extent of the production of petroleum, the expense of the production, and what, if any, methods might be devised that would establish a more economic treatment of the whole problem, which problem, he added, he understood already had been frequently under discussion by the representative leaders of the industry.

"The government itself, Secretary Work pointed out, is no negligible factor in the current production of petroleum and the board would welcome suggestions that might be of benefit to the government in its operation of federal oil reserves.

"In this cooperative study of the oil situation, the chairman added, the industry, through its vast experiences in the development of the oil industry, was in an excellent position to point the way to better and more satisfactory method of coping with a problem which means so much to the future welfare of the country.

"In addressing the board's letter of inquiry to the industry, Secretary Work further explained, it was hoped that through the data supplied, an exhaustive and helpful analysis of the situation could be made, that a definite governmental policy might eventually be evolved that would be beneficial to the industry and the government, and that, to carry out the President's view that government and business might well join forces in working out this practical problem, it was essential that there be the fullest cooperation in the present inquiry.

"The board's letter, in full, is as follows:

"'Under the instructions of the president, this board invites the full cooperation of the oil industry in studying the complex problem presented by the present situation. The members of the board feel their full responsibility in matters of national security and industrial prosperity, but realize also the large interest felt by the representatives of the oil industry. Because these responsibilities have much in common, cooperative effort is highly desirable.

"'The primary object of this study under government auspices is elimination of waste.

"'It is the purpose of this board to conduct this inquiry so far as possible as a cooperative study to which representative oil men must be the largest contributors. The opportunity is here for the men who know the facts to come forward and suggest safe lines for remedial action. For general guidance in formulation of suggestions we would be glad to have your views on subjects as given below.

Questions Asked

"'(1) Generally, in what directions do you consider that waste in production could be reduced and stabilization effected?

"'(2) What is your estimate of overproduction, if any, at this time? (a) If there is overproduction, what is it costing the industry in expense of storage, in dumping of surplus on the fuel market or in other ways? (b) What are the underlying causes of such overproduction, and the remedies?

"'(3) With the present day development of technique for finding oil and for producing oil at a rate never before attained, how can the brakes be put on the "bringing in" of new pools and unneeded production? (a) What can be done in exploration of new pools, or fields, without exploitation until the market demand warrants new production? (b) How can the government and the industry cooperate in encouraging the creation of drill-tested reserves to be opened as needed? (c) This would mean not conservation as some define the word, but simply delayed production rather than wasteful production which threatens to deplete the nation's oil resources.

"'(4) How imminent do you regard any serious difficulty in meeting the country's oil requirements? (a) Should a shortage be anticipated by preferential use? (b) Should a shortage in domestic crude come, what will the future offer in way of substitutes—foreign oil, oil shale, coal distillates or organic distillates?

"'(5) Under present conditions, is oil being produced and used as fuel that could and should be replaced by coal? (a) What is your estimate of the amount if any, of this unnecessary use of oil as fuel and what are the effects on the oil industry?

"'(6) Under the present methods of producing oil, what is your estimate in volume of the waste of oil and gas? (a) Can you list the principal causes and suggest means of avoiding or reducing the waste?

"'(7) Do you regard changes in technical methods in the production and consumption of oil as promising relief in reducing the present high percentage of waste, or do you recommend changes in laws governing possessory rights in oil and gas as necessary to avoid the present scramble for oil? (a) Do you as an alternative to legislation see any promise in cooperative agreements providing for the unit leasing, or unit operation, of all the lands in an oil pool?

"'Answers to the foregoing questions are solicited. They are not intended, however, to be all inclusive, and indeed many phases of the subject are not mentioned. It is hoped that you will feel at liberty to supplement this questionnaire and express opinion on other phases of the problem.

"'At this time a frank statement of facts and opinions is asked of those best qualified to advise this board. It is expected that conferences will be arranged later at which opportunity will be given for a discussion of ways and means of relief.

"'We ask your assistance and urge your full cooperation."'

Oil Men Questioned

Among those to whom the letter was addressed, are:

J. C. Anderson, President, Pan American Petroleum Co., Los Angeles, Calif.

Harold Pratt, president, Standard Oil Co., New York, N. Y.

Ralph Arnold, Los Angeles, Calif.

W. L. Stewart, president, Union Oil Co., Los Angeles, Calif.

Amos L. Beaty, president, The Texas Co., New York City.

A. C. Bedford, Standard Oil Co. of New Jersey, New York City.

W. M. Burton, president, Standard Oil Co. of Indiana, Chicago, Ill.

(Continued on next page)

(Continued from preceding page)

J. D. Clark, vice-president, Midwest Refining Co, Denver, Colo.

Geo. S. Davison, president, Gulf Oil Corp., Pittsburgh, Pa.

Wm. N. Davis, president, Mid-Continent Oil & Gas Association, Bartlesville, Okla.

E. DeGolyer, general manager, Amerado Petroleum Corp., New York City.

Henry L. Doherty, 60 Wall Street, New York City.

W. S. Farish, president, Humble Oil & Refining Co., Houston, Texas.

F. Julius Fohs, Boyd Oil Co., Dallas, Texas.

James H. Gardner, president, Gardner Petroleum Co., Tulsa, Okla.

John Hays Hammond, Washington, D. C.

K. R. Kingsbury, president, Standard Oil Co. of California, San Francisco, Cal.

E. W. Marland, president, Marland Oil Co., Ponca City, Okla.

A. C. McLaughlin, Associated Oil Co., Los Angeles, Calif.

Thos. A. O'Donnell, California Petroleum Exchange, Los Angeles, Calif.

J. Edgar Pew, vice-pres., Sun Oil Co., Dallas, Texas. (pres., Amer. Petr. Institute).

Getting On Dangerous Ground

By W. H. Gray

President, National Ass'n Of Independent Oil Producers

(From an address before Oklahoma Press Association, Jan. 9, at Oklahoma City)

THE appointment of this committee and the president's letter naturally creates in the minds of the owners of oil properties considerable anxiety; they want to know more about it. The industry has been subjected to continuous investigation by the various branches of our government for the past two years, and I might say right here that these investigations have not yet been concluded; that, while the various secretaries named on this new board of investigation are ostensibly working out a plan of conservation, the Department of Justice and the Federal Trade Commission are engaged in investigating a lot of us for our attempt at conservation in 1923 and 1924.

For this reason, we are now anxious to have a show-down on the question. In addition to these investigations by the federal government there have been innumerable investigations by state authorities in states which were consumers but not producers of crude oil.

The question in the mind of the producer is, "What is this commission going to do? Will it confine its activities to the conservation of the tremendous resources of the Government in the way of public land for national defense or is it the purpose of this commission to make a survey of the entire industry with a view to recommending legislation fastening upon the industry some measure of control and regulation? Is it going to suggest that the hand of the government be laid upon private property for future industrial welfare?" From a recent interview given out by the secretary of the interior in Chicago one would gather the impression that the federal government contemplated taking control of the private properties of those engaged in the oil industry; that some form of regulation of privately owned oil property was to be undertaken by the federal government.

If it is true that the purpose of this commission is to recommend legislation seeking to control the activities of the independent producer upon his own property, then it is indeed, a bold step, and one which will need much explanation on the part of the government as to why the petroleum industry should be singled out for regulation and control. The question which presents itself to my mind is, why I should be called upon to make the supreme sacrifice of my property, and why I should sit supinely by and have my property confiscated for the general good of the country. Is it a matter of national defense or a matter of purely commerical protection?

Our federal government formerly owned almost uncountable millions of acres of land, the mineral right of which was given away. Because the government has been prodigious in ladling out its own reserves should it now undertake to confiscate mine as a national defense? I should say not; it would be unjust and unfair. If the government desires additional petroleum resources as a national defense, having given most of its own away, it should appropriate the money and buy them. There is in the shale beds of the Rocky Mountains alone enough oil for naval and war purposes to last this country three hundred years and it can be recovered at a very reasonable expense.

Producers, Wake Up!

The letter of the president would appear to be a great boon to the producer. One would gather from it that he intends to check production and thereby increase prices. It would, at first sight, apppear to be a great market stabilizer; and to a lot of producers it would appear to be something worth while—a rift in the dark clouds and I do not question the honesty or the sincerity of our President, either to help the producer or to safe guard our national defense but I must warn him, as well as the petroleum industry, that federal interference and control of the producing branch of the industry inevitably must lead to federal control and supervision of price structure. The government cannot meddle with the producing branch without meddling with the price structure.

There are 110,000,000 people in the United States interested in the consumption of oil products and there are not more than 200,00 interested in producing crude oil and when the producer hands over to the government the power to fix, regulate, supervise or influence the price of crude oil, who do you suppose is going to suffer? Will it be the 110,000,000 or the 200,000? The answer to this question is too apparent to be worthy of discussion. When there is a scarcity of oil, the agents of the government, who have the power to run the oil industry, will not permit the producer to take advantage of the market situation and raise the price which he is entitled to when there is a temporary shortage of crude, but when there is an abundance of oil the producer will be left to his own fate and he will be permitted to go as far as he likes toward destruction. I want to avail myself of this opportunity to thank the president for the deep concern he feels for the oil industry but the independen producer begs to be excused from any federal regulation of his business which may inevitably lead to price regulation.

Duty of Federal Government

I am in favor of the federal government setting aside every acre of land which it owns as a naval and war reserve as a part of our national defense. In addition to this I think the government should complete its requirements for defense purposes by purchasing oil reserves in the form of known shale bed deposits sufficient to fight any war for the next five hundred years.

The federal government should furnish the petroleum industry accurate and up-to-the-minute data on production, consumption, exports and imports just as is furnished to the farmers of this country. This can be done through the Bureau of Mines. The anti-trust laws, both federal and state, should be amended so as to permit the industry within itself to enter into drilling agreements so that when new oil fields are discovered they could be properly and orderly developed. If this aid to the industry is extended, the industry will have, indeed, been rendered a real service and the future welfare of it may well be left in its hands without government interference.

The long, narrow field, which extends from the northeast of the Wortham townsite a little more than three miles southwesterly across the Limestone-Freestone county boundary, is proving to have a maximum width of about 2000 feet, instead of a similar minimum breadth. Consequently, the original lo-

cations in the field account for about all the productive ground; and the buying at first counted upon will prove ample for development needs.

It was only in the holiday season that any considerable delay was encountered in getting supplies on the ground quickly. This was brought about by the worst blizzard conditions in 30 years, aggravated by sleet and afterwards rain. The downpour of rain tended to relieve a scarcity of drilling water, but it aggravated transportation in the field, which is mainly by wagon teams.

Including steel plate for tankage construction, a total of nearly 1000 carloads of material was on sidetracks in the East Texas district for a week or more around the holidays. In Mexia alone, 321 cars were on the sidetracks for unloading Christmas week. When the weather became good again, around New Year's, it did not take long to clear up this congestion.

Already equipment is being moved in to provide against the time when the wells quit flowing. Standard rigs and parts, such as bull wheels, etc., are now being stocked. A large quantity of this material is reported on sidetracks near the town of Hearne, ready to be moved in when the flush production of the field passes, within the next 60 days, and wells are put to pumping.

The equipment phase of Wortham development, from the furnishing of drilling supplies to the making ready for pumping operations, has moved from one stage to another like clockwork. The requirements of the operators have been anticipated, and are being anticipated as each new stage of work develops.

Except for the fact that operators prefer a more orderly development, where operations are less intensive and drilling is less competitive, Wortham has been one of the most satisfactorily handled campaigns within recent years. The equipment manufacturers and distributors have been on the job no less than the operating companies and all are making the most of the situation.

Institute Pledges U. S. Board Cordial Aid

(Continued from page 17)

collaboration on the part of the industry necessitates the collection and exhaustive study of many facts not readily available in order that the institute may present constructive policies and avoid immature recommendations or unwise experiments,

"Now, therefore, resolved, that the president of the institute be requested to offer to the federal oil conservation board the cordial cooperation of the American Petroleum Institute.

"Resolved, that the president of the institute be and is hereby authorized to appoint a committee, of 11 members, consisting of its president and general secretary ex officio, and nine other members of the institute, with power to appoint subcommittees, to collect the facts, to study the problems pertinent thereto and to report its conclusions and recommendations to this board at a future meeting for its consideration and action, and

"Be it further resolved that the committee be requested to seek the views and cooperation of all branches of the industry."

President J. Edgar Pew, who presided at the sessions, will appoint the subcommittees as quickly as possible.

The meeting was exceptionally well attended, 33 of the 52 directors being present. Seven of the 10 Pacific coast members came on, including ex-president O'Donnell.

The new committee on public relations, authorized for the industry at the last meeting of the institute, held an organization meeting Monday morning. W. N. Davis, who has acted as chairman of the temporary committee which began investigation of the subject a year ago and on whose report the institute acted at Fort Worth, was elected chairman and J. Howard Pew was made vice chairman. No secretary was named as the committee expects to function, at least for the present, through the offices of the institute.

The committee voted to have the institute's treasurer act as its treasurer for the fund of $300,000 to be paid over, three years' time, which fund it was authorized to raise, when it needed it, at the institute's last meeting. The personnel of the premanent committee is the same as the temporary committee and consists of nine appointed for the institute and eight selected by the various oil associations cooperating on the publicity idea.

Chairman Davis was authorized to name an executive committee of five to have full charge of the committee's activities subject to the committee's directions. He will name this committee shortly and get it down to work. Their activities will be developed conservatively the committee feeling that more ground can be gained in the long run by feeling its way and having behind it at all times the hearty cooperation of the whole industry.

Adopts New Lease Form For Indian Lands

WASHINGTON, Jan. 9.—A revised uniform type of oil and gas lease form applicable to all restricted allotted Indian lands has been approved by the Secretary of the Interior the Department of the Interior says.

The form is to take the place of three different forms heretofore used, one applicable to lands of members of the Five Civilized Tribes, one to lands allotted to Indians of the Kiowa Reservation, and the other a general form applicable to all other restricted allotted lands wherever situated.

The new form not only contains provisions more advantageous in many respects to the lessor and lessee but has been made to conform to the commercial oil and gas lease so far as the basic difference between the two forms will permit.

Dr. Bridge, Doheny Aid, Dies At Age Of 80

By Special Correspondent

LOS ANGELES, Jan. 12.—Dr. Norman Bridge vice president and a director of the Pan American Petroleum & Transport Co. and allied companies, died Jan. 10 at his residence here at the age of 80. Only a few months ago he celebrated his golden wedding.

Although Dr. Bridge had lived here for 34 years he maintained a legal residence in Chicago because of his peculiar slant as a philanthropist and the fact that certain kinks in the California inheritance tax laws were not in harmony with his ideas.

He was a picturesque figure in the medical profession for many years and was the author of two books and many medical papers.

Dr. Bridge was born in Windsor, Vt., in 1844 of Revolutionary ancestry. He attended the medical schools of the University of Michigan and Northwestern university where he was graduated in 1868. Two years later he become professor in the Women's Medical college. In another two years he was a professor in the Rush Medical college, Chicago, and from 1881 to 1884 he was a member of the board of education in Chicago, serving as its president for two years.

Failing health brought Dr. Bridge to Pasadena in 1892 and he became one of the leading physicians there. In 1901 he mortgaged his home to invest $50,000 with E. L. Doheny in the Mexican Petroleum Co. A few years later he was vice president and treasurer of it as well as of other Doheny companies.

During the recent trial of the government suits to annul Doheny's Elk Hills naval reserve leases, Dr. Bridge spent a few hours in the courtroom. That was his last appearance in the business life of Los Angeles.

During the war Dr. Bridge served as chairman of the national alien enemy relief committee.

From his oil investments he became several times a millionaire. His public gifts include one of $550,000 to the California Institute of Technology, Pasadena; $100,000 to Rush Medical college and numerous bequests to the University of Southern California and the Southwest Museum in Los Angeles; the Los Angeles Symphony orchestra, Los Angeles orphans' home and hospital association of the Lutheran church.

He is survived by his widow, Mrs. Mae Bridge whom he married in Chicago in 1874.

Looks about like any other small Texas town. This is Wortham, scene of the principal boom of today.

Wortham To Reach Peak Within 12 Weeks After Its Discovery Well

By Paul Wagner
STAFF REPRESENTATIVE

WORTHAM, TEXAS, Jan. 9 — AFTER 12 weeks of intensive development, the newest oil field in the east Texas fault zone may be expected to reach a peak of daily production, by Feb. 15, of between 200,000 and 250,000 barrels.

Wortham should have producing by that time no less than 215 wells, possibly as many as 250, in contrast with 39 producing wells last Wednesday and only the discovery completion of the field on the Saturday night before Thanksgiving.

Probably 50 additional wells will be completed in the Wortham field after peak production is reached, but the flush oil from them will be insufficient to stem the decline that will follow the reaching of the high mark.

The 39 wells that were being exploited Jan. 7, were giving up 130,205 barrels as of that day. This represented roundly 69.9 per cent of their total initial production, which is shown in an accompanying table at 186,000 barrels.

Average daily per well production of all the wells in the field amounted to roundly 3340 barrels daily, Jan. 7. This approximates the first 24-hour production of fresh completions in those parts of the field where earlier wells have been drawing upon the underground oil reservoirs for a number of weeks.

In newer parts of the field, or where wells have been drilled deeper into the pay sand than others on adjacent leases, measurably greater daily flows are obtained. A current operation of this character is the No. 1 Lindley well of Stroube & Stroube, on the Simmons tract, slightly more than a mile southwest of the Wortham townsite, which was deepened eight feet to total depth of 2993 feet and its flow increased from initial production of 3000 barrels to 7000 barrels.

Any considerable deepening practice, especially if it should bring about equivalent results to those encountered in drilling the Stroube & Stroube well further into the pay sand, would tend to invalidate estimates made elsewhere in this survey and to raise the mark of peak production forecast.

Field in Sight of Mexia

The extreme southwestern point of production in the Wortham field is in Limestone county, within sight of the so-called "Fish Pond" area, which marked the northermost limits of the earlier Mexia field.

It was at the most southwesterly point in the Wortham field that the discovery well was drilled in the Saturday night before Thanksgiving, making "heads" of oil, intermittently, at 2989 feet. Within the next few days, the well made its maximum daily flow of 2000 barrels at 3011 feet.

Thanksgiving day, the Humphreys-Boyd Oil Co., brought in its No. 1 Simmons well, a mile and a half northeast of the Boyd in that part of Freestone county where its northwest corner fits in between Limestone and Navarro counties.

The Simmons well brought production to within a mile south of the Wortham townsite, the southeast one third of which was proved for oil by later developments in the field.

At a point more than a mile northeast of the original Simmons production, and east of the northeast corner of the Wortham townsite, the farthest northeast production in the field is on the Dodd (Redus) lease of the Humble Oil

Little Effect on Market

THE limitation of Wortham's effect upon the Independent petroleum industry results from the handling of this field's production as a separate unit and because integrated rather than single phase operators benefit mainly from its development.

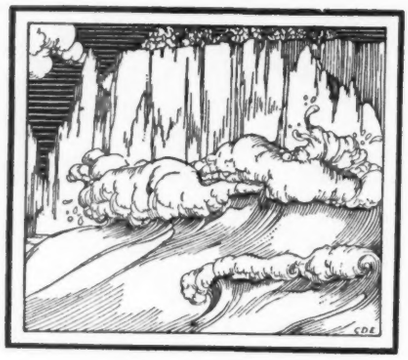
As pointed out in the accompanying survey, few skimming plants exist in the east Texas territory. The percentage of U. S. Motor gasoline obtainable from Wortham crude by straight refining is not attractive, being about 20 per cent, although the oil is valuable for cracking.

The result has been that Wortham has not created any change in the Mid-Continent production situation. Independent refiners continue to pay premiums for crude in the Wichita Falls district and in numerous Oklahoma fields.

Wortham's sole effect, therefore, has been to squelch over-optimism and in a measure to stave off drilling by operators who are now proceeding elsewhere with greater caution.

When the Sales Tide is rising

use the TELEPHONE



AT THE RUSH SEASON of the whole year, at the very crest of the tide of orders, the New York manager for a world-known maker of fountain pens and pencils placed his ten field salesmen at long distance telephones with lists of customers before them. Last minute orders were brought in in time to be filled, dealers were spurred to extra effort to sell, and thousands of dollars' worth of business was brought in that both company and dealers would have lost.

The fastest salesman in America is the telephone. It eliminates distance and outtravels time when every hour, every minute counts. At their peak seasons of sales, when business will not wait, the telephone earns millions of dollars for American businesses. It gets the orders that otherwise could not be taken and filled in time. By the quick service, it creates additional millions in good-will.

The long distance telephone is used by thousands of leading concerns for daily sales solicitation. Bonds, locomotives, hosiery, piece goods, fruits and produce, matches, motor trucks, real estate are a few of the products bought and sold day by day on the long distance telephone. Ten thousand long distance calls an hour stimulate and quicken business.

Are you fully utilizing the amazing business potentials of your telephone? The Commercial Department is ready to help you discover new possibilities in the wider use of long distance facilities. Call your local Bell headquarters. In the meantime, you are used to selling a few miles away over your local telephone. Why hesitate at a few hundred or a few thousand? Any concern, anybody, anywhere, is yours for the asking. . . . *Number, please?*

BELL LONG DISTANCE SERVICE

& Refining Co., a few hundred feet more than three miles away from the Humphreys-Boyd discovery well on the Boyd, in a general northeasterly direction.

Dry hole failures that had preceded the drilling of the Wortham discovery were key points for field engineering work that made it possible to draw broadly the productive limits of the field after the first few wells were in. This data admitted of no greater breadth of the field at its widest point than 3000 feet, probably less.

Fields Width 2000 Feet

Now is has been shown by additional data that the width of the field will be about 2000 feet at its widest point and that it will narrow toward either end. An average of 2000 feet in width for the length of the field would give slightly greater area of productive ground than actual drilling practice will show.

For convenience, however, a width of 2000 feet is herein allowed the full length of the field as at present constituted. Figured on this basis, the Wortham pool is contained in an area of approximately 650 acres of proved ground; and even the extension of the field at either end would not bring the total of the productive area to more than 800 or 850 acres at most.

Within that area will be completed 300 wells, from 215 to 250 of them before Feb. 15. When the drilling program shall have been completed, there will exist an average of one well to every two acres in the field as now constituted; and, allowing for 800 acres of productive ground, to be made possible by the extension of the field at either end, there still would be only slightly more than 2½ acres, average, to the well spacing.

Allowing the maximum figure of 850 acres of productive ground, it would require an average recovery throughout the field of 35,000 barrels of oil per acre to reach a final yield total of 29,750,000 barrels.

Both Mexia and Powell have produced already more than twice the total recovery that the foregoing figures would indicate for Wortham. Both cover twice as much area or more, but probably neither of them will exceed total oil recovery for the whole of their respective areas of more than 35,000 barrels per acre.

Mexia has produced roundly 68 million barrels of crude and still making more than 20,000 barrels daily at about five years old. Powell, which is roughly two years old, has given nearly 62 million barrels total, and is good still for neary 60,000 barrels daily.

Known data of similar character to this forms a background for the study of the effect of such fields as Wortham, and for the projecting ahead of what may be expected of that type of field in the course of its development.

Well Averages Drop Quickly

A few of the first wells in this type of field come in flowing at the rate of 10,000 to 12,000 barrels daily. It is considered safer practice to choke them down, however, than it is to let them flow wide open; because, in fields such as Wortham, Powell and Mexia, where structural faulting traps the oil in a sand horizon 3000 feet below the surface, the accumulation is backed up by a salt water table down the structure to the southeast.

The flowing of wells wide open, and especially if they are located down the structure toward the water table, tends to bring about a condition of flooding the sand with brine. As the oil is taken off the top of the structure, the water table tends to rise. The relief of pressure tends to lower both the initial production of wells and their more settled output.

What is home without an oil well in the backyard?

It is because of the relief of the natural underground pressure that later completions tend to approximate in their initial stages the smaller production to which earlier wells have declined. This stage is already being reached in parts of the Wortham field.

The completion of 100 producing wells in the field probably will find the daily per well average nearer 1500 barrels than the present 3340 barrels. A few weeks ago, with about 15 wells producing, the average was in excess of 6250 barrels per well.

When 200 to 250 wells have been completed the daily per well average probably will have declined to 1000 to 1100 barrels per day per well, and the decline will continue.

Because of the bunching of completions, single day production figures may vary considerably from the foregoing; they may be increased materially in the case of heavy bunching of completions, or conditions may come about that will make these figures too high.

In general, however, the rate of development and the bunching of completions will govern. This is in contrast to the quantity of oil to be recovered, which will not be affected.

Effect of Salt Water

One thing that can be said in this connection has to do with the much maligned salt water encroachment that is common to pools of the east Texas fault line type. The presence of this water has the effect of flooding out the sands and driving the oil ahead of it. A greater percentage of petroleum content, therefore, is finally recovered from the sands in this type of field than is the case with others.

The appearance of water is watched for carefully for two reasons. One is to avoid bringing it into the part of the sand where the oil is located until depletion of the field develops this condition as a natural thing. Another reason is that the finding of water down the slope of the structure indicates prox-

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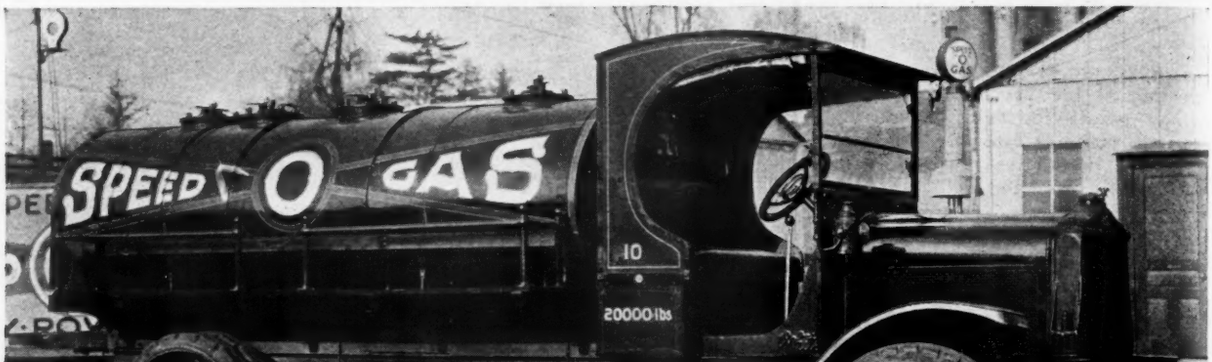
Wortham Making 150,895 Barrels From 53 Wells

Staff Special

WORTHAM, TEX., Jan. 12.—Fifty-three wells at Wortham today were making a daily total of 150,895 barrels. Their per well average, including flush completions, amounted to slightly less than 3000 barrels.

Additional completions over Sunday included: Humble Oil & Refining Co. B-1 Lindley, 7500 barrels at 2976 feet; Farish, Watts & Collins, No. 2 Jackson, 4000 barrels at 3015 feet; J. K. Hughes Developing Co., No. 2 Crouch, 5000 barrels at 3004 feet; Murchison & Fain No. 1 Simmons, 1800 barrels at 2982 feet; Pure Oil Co., No. 3 Bounds, 3600 barrels at 2970 feet; Kirby Petroleum Co., No. 2 Wright, 1500 barrels at 2995 feet; Owenwood Oil Corp., No. 1 Simmons, shut down for orders at 3011 feet after getting 300 feet of oil standing in the hole but no water.

The Owenwood well will not flow as it stands. Gulf has abandoned Nos. 2 and 3 Ferguson after drilling below productive levels on east side of the field, and has abandoned Nos. 2 and 3 Simmons upon unfavorable showing of other company tests.



Speedway Tank After Fire Mounted on New Chassis

Heil Vents Save Speedway Tank

THIS unusual accident took place in front of one of the Speedway Service Stations in Philadelphia last October. Alongside of where the Heil truck tank was parked, workmen had placed a lighted red lantern on their job before leaving.

This lantern was accidently tipped over. It rolled under the truck, flared up and ignited several of the truck fittings. Instantly the truck was a mass of flames. The intense heat, which scorched buildings half a block away, melted the fusible metal in the Air Vents.

The gasoline in the tank vaporized and was given outlet through the Vent openings. The entire truck was consumed in flames. THERE WAS NO EXPLOSION. THE FIRE DID NOT SPREAD. NO ONE WAS KILLED OR INJURED. THE HEIL FULL-FLOW VENTS SAVED UNTOLD LOSS.

When Speedway officials examined the ruins, they found the cab and chassis damaged beyond repair, BUT the tank seemed in good shape. It was tested and found to be absolutely leak-proof. It was a HEIL Tank—fitted with Heil Safety Full Flow Vents.

Handler, Speedway President, says:

"The tank which you remounted for us is back in service—a 100% first class job. We marvel to this day at the way your safety valves and vents operated during the fire we had. We certainly are now enthusiastic boosters for your Heil Full-Flow Vent. It will positively keep a tank from exploding."

"Heil Vents Saved the Tank"

"The fact that the truck was entirely burned up and that the tank is now mounted on a new truck is proof enough of the worth of your Vent. Your company has also given us excellent service and good treatment. Such other equipment as we may require, you may rest assured will all be HEIL."

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imity to the water table, which marks the east-southeast edge of a field of this type.

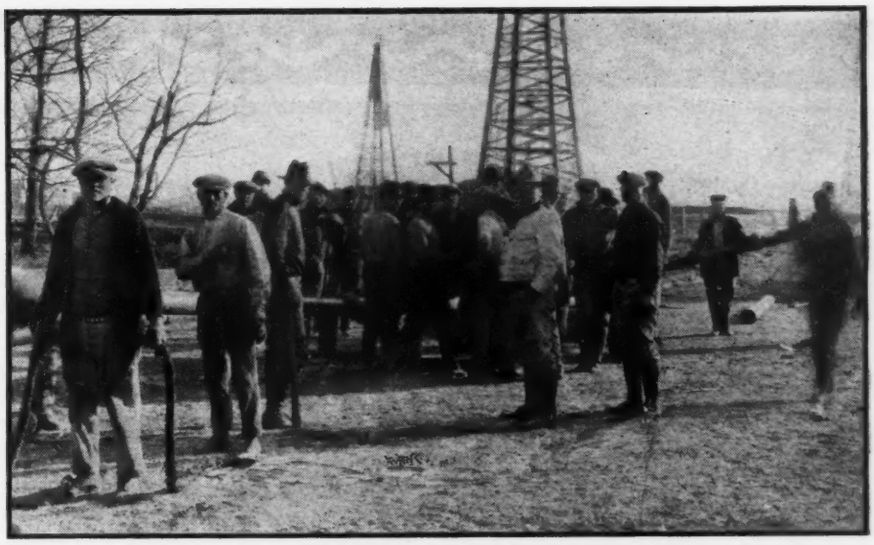
The water table at Wortham is now estimated to be at approximately 2555 feet below sea level. Surface elevations above sea level in the field range from 425 to 475 feet generally, with some further variations.

In parts of the field and more especially along the fault plane itself, it is probable that good oil production will come from levels below the depth to the water table on the down-slope of the field. At Powell, as much as 10 million barrels of crude was produced from depths below what is commonly referred to as the danger line.

Notable among properties that gave up this type of oil were the Gulf Production Co.'s Crews lease, the Atlantic Oil Producing Co.'s Kellum, the Tidal Oil Co.'s Phillips and various small properties in what is known as the tank farm area, near the south end of Powell.

Ordinarily it would be proper to attempt to show the effect of Wortham upon the petroleum industry and then to analyze the details tending to prove the case under discussion. In this instance, it has been thought proper to carry the development ahead to the present time and as far into the future as the evidence warrants.

It is only with a background of the general type of the foregoing that it is possible to understand the why and the wherefore of what otherwise would be necessarily complicated statements. This background is also necessary to show why it was necessary for operating companies to take up great tank building programs for the handling of the oil to be produced, in addition to taking advantage of the existing pipeline facilities.



About the only rest these fellows get is when someone photographs them. Otherwise they have to "jump on their wrists" rapidly to keep the pipe line division up with the production

Although a number of smaller interests are producing oil in the Wortham field, and still others have yet to complete their first wells, it has been mainly the companies that consistently operate in Texas who have carried on the intensive development that is still under way.

Major operators, who also have their own pipeline facilities produce this crude for their own uses. Others of the type of the Humphreys-Boyd Oil Co. contract their production in advance to purchasers such as the Prairie Oil & Gas Co.

Companies of the type of the J. K. Hughes Developing Co., who are important Independent operators from one field to another in Texas, generally sell their oil to much the same purchasers because of their outlet being steady. Unless facilities for handling the oil are over-taxed, very little crude is available to other than the old established outlets.

Not Skimming Plant Territory

The east Texas territory has never been built up with the skimming plant type of refinery. Except to a few plants in the Dallas-Fort Worth district, the freight tariffs on tank car shipments of crude from this territory would be prohibitive when the gasoline value of the oil is taken into account in straight run practice.

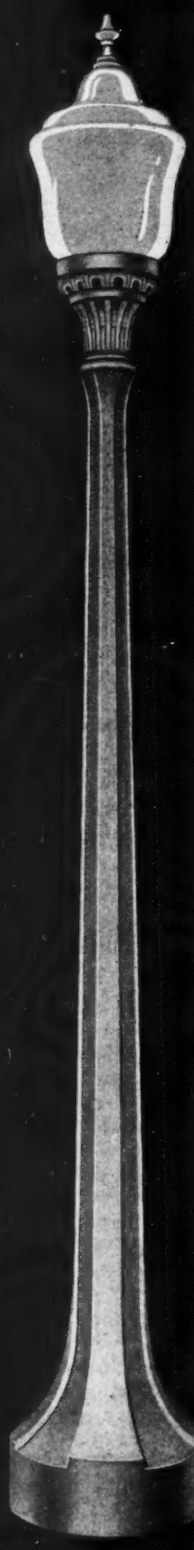
Clayton Oil & Refining Co., at Dallas, has a loading rack at Wortham and contracted with the Rio Bravo Oil Co., for about 3000 barrels of crude daily. This company operates Burton stills, however, and presumably the Wortham crude is being used for cracking stock.

Wortham oil, although it grades 40 degrees, A. P. I., is high in kerosene and heavy naphtha ends in straight run

Tabloid History of Wortham Wells

Company—Well	Date Completed	Total Depth	Initial, or Maximum Prod.	Jan. 7, 1924 Production
Humphreys—Boyd Oil Co.				
Boyd 1	11-29-24	3011	3000	745
Simmons 1	11-28-24	2983	7300	
Simmons 2	12-28-24	2982	3000	
Simmons 3	12-17-24	2984	6000	
Simmons 4	12-18-24	2980	6000	
Simmons 5	1- 2-25	2981	3000	
Simmons 6	12-31-24	2982	2500	13,160
Manning 2	1- 5-25	3011	700	Deepening
Ferguson 2	1- 5-25	3017	1200	1560
Humble Oil & Refining Co.				
Ferguson 1	1- 5-25	2980	6000	4410
Lindley A-1	1- 3-25	2975	6000	4040
Crouch A-1	12-27-24	2985	8400	3480
T. B. Poindexter 4	1- 6-25	3005	6000	6000
R. G. Poindexter 2	1- 3-25	3008	8000	8575
Dodd (Redus) 1	1- 1-25	3014	1500	
Dodd (Redus) 2	1- 2-25	3017	1800	2735
Pure Oil Co.				
Bounds 1	12-21-24	2982	6000	
Bounds 2	12-27-24	2964	3000	8130
Rio Bravo Oil Co. (Southern Pacific)				
H. & T. C. 1	12-20-24	3000	4080	2085
H. & T. C. 2	1- 1-25	3000	4200	2050
H. & T. C. 4	1- 2-25	2985	5600	5050
Simms Oil Co.				
Calame 1	12-26-24	3015	7500	
Calame 2	1- 5-25	3015	4000	10,255
Simms & Marland				
Simmons 2	1- 5-25	2971	7000	5875
Simmons 3	12-26-24	2964	2500	1430
Kirby Petroleum Co.				
Bounds 1	12-11-24	2982	7000	2560
Chancellor 1	1- 1-25	3008	8500	6045
Mrs. J. K. Hughes				
Simmons 1	12-15-24	2981	8000	3985
J. K. Hughes Developing Co.				
Crouch 1	1- 5-25	2992	5000	3455
Farish, Watts & Collins				
Jackson 1	1- 6-25	3008	3000	3000
Gulf Production Co.				
Ferguson 1	1- 5-25	3022	630	540
E. L. Smith Oil Co.				
Beal 1	12-15-24	2987	5000	2030
Edwards 1	12-21-24	3015	9000	net—2125*
Stroube & Stroube				
Lindley 1	12-25-24	2985	3000	Drilled Deeper
(Deepened)	1- 6-25	2993	7000	7000
Atlantic R. R. Penn et al.				
McCorkle 1	12-13-24	3015	7000	5675
Atlantic Oil Producing Co.				
Simmons 1	1- 5-25	2986	3000	2520
Moss et al.				
Simmons	1- 3-25	2981	3000	4155
Sun Oil Co.				
Simmons 1	1- 6-25	2994	4000	4000
Oxford Oil Co.				
Morrow 1	1- 2-25	3000	2500	2205
Totals—39 Wells			186,000	130,205

*This well making 40 per cent b. s. with relation to total flow.



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Part of Supply house Row at Mexia; in foreground, Republic Supply Co.; Jarecki Manufacturing Co.; Bradford Supply Co.

Section of Supply house Row at Mexia, from which point Oil Well, National and Peden Iron and Steel Co., serve the Wortham Field.

refining practice. These ends total between 55 and 60 per cent.

In straight run refinery practice, the total recovery of U. S. Motor gasoline amounts to slightly less than 20 per cent. The motor fuel recovery can be increased to roughly 30 per cent, however, by toning up with raw natural gasoline.

These conditions taken into account it is apparent that Wortham crude, which approximates the refining value of that from the earlier Mexia field, is not an especially desirable raw material for the skimming plant refinery. In the case of the major companies, whose refinery methods are more diversified, the condition is different.

Tanker Shipments Important

The result is that the outlet for Wortham crude is mainly to the larger integrated units in the southwestern territory, who produce and store for their own needs in Texas, or who produce oil in Texas for tanker shipment to Atlantic seaboard plants.

Atlantic Oil Producing Co., subsidiary of the Atlantic Refining Co., is confining almost all of its field activities to the South Arkansas and the east Texas areas. In addition to supplying its own plants with crude, the Magnolia Petroleum Co. has sold quantities of crude for years to the Standard Oil Co. of New York.

Humble Oil & Refining Co. has been a consistent shipper of Texas crude to the Standard of New Jersey for a number of years, and particularly those grades produced in the earlier Mexia and Powell fields. No doubt large quantities of the Humble's produced and purchased oil at Wortham will move into this and similar channels, in addition to contract quantities to find a similar outlet from the Marland Oil Co. of Texas.

Marland Oil Co. of Texas, in recently turning over its Wortham acreage to be drilled by the Simms Oil Co., on a three-eighths over-riding royalty basis, inserted a clause in the contract making it possible for Marland to segregate its share of the oil for movement to its Texas City ocean terminals.

The effect of Wortham upon the refining and distributing branches of the industry is, therefore, seen to be indirect rather than direct. The flush period over the turn of the New Year made it possible for Wortham to shove Texas ahead of Oklahoma in daily average production, and Wortham's stride past the 200,000 or the 250,000 barrel daily mark prabably will put the state ahead of California also.

In the meantime, it is not probable that Wortham will bring about a decline in crude oil prices. The opening of the field found the Gulf Production Co. with approximately 400,000 barrels of crude oil storage room in the territory; The Texas Co. is in the market for crude oil outside its own production; the Humble and Marland can move any excess they produce or purchase to Atlantic seaboard plants; the territory is convenient to the Magnolia pipeline system, which serves refineries both at Corsicana and Beaumont; the Atlantic Oil Producing Co. utilizes such crude as this for the account of the parent company; and the Sun Oil Co., operating as a producing interest out of Dallas, has its Atlantic Seaboard refining department to supply with raw material.

Direct Effect Minimized

To the extent that Wortham crude is utilized in Gulf coastal and Atlantic Seaboard plants as against raw material that otherwise would have had to be drawn from other sources there will have been created an indirect effect of this field upon the general industry. In a direct sense, however, the effect will be minimized.

It is with such a background as this that there appears in the industrial picture the probability that Wortham will not have the effect of bringing about a crude oil price reduction. It appears definitely to have staved off for the present, however, an increase that might otherwise have resulted.

A desperate effort was made in Texas to hold back Wortham development. It was the type of field that was known in advance on geological information, to be important. This was possible from sub-surface correlation of the formations encountered in old failures with the showings found in newer tests. Even in advance of the completion of the discovery well, this was certain and at that time the field was conceded to be sure of reaching a daily average production minimum of 50,000 to 100,000 barrels.

Tried to Hold Field Back

The Humphreys-Boyd Oil Co., which drilled in the first well, sought a gentlemen's agreement whereby other companies would not proceed with development until more satisfactory economic conditions prevailed. Many of the other principal operators felt similarly about it. They had conducted their leasing play on the basis of geological information and there was little left to do after the first well came in than to go ahead with development.

Except for trading among themselves after the fashion of the Marland turn of acreage to Simms on a three-eighths over-riding royalty, and a certain number of royalty purchases by individuals, lease interest had been almost forgotten when the actual discovery was made.

Col. A. E. Humphreys, whose Humphreys Oil Co., at Mexia and Powell, was sold to the Pure Oil Co., before he formed the present operating interest, drilled in the first Wortham well to protect priority of discovery, after it had been found impossible to get unanimous assent to the gentlemen's agreement he and other important operators had sought. That started the fireworks. The rest is history now in the making.

Will Drill in Guatemala

PITTSBURGH, Jan. 10.—Dispatches reaching Pittsburgh indicate that Benedum & Trees, Pittsburgh oil interests have entered into an agreement with Petrolera Isabal, a Guatemalan oil development corporation for the drilling of wells on a 2,000,000-acre tract near Peten, in northern Guatemala, south of the Mexican state of Tabasco. Drilling is to commence at once and if successful a $30,000,000 corporation will be formed with Petrolera Isabal sharing in a 10 per cent stock award and 5 per cent royalty on 30,000,000 shares. Petrolera Isabal last November was granted an 8,000,000-acre tract near Peten.

Gas Stocks Fall Instead Of Rise In November, For First Time

CLEVELAND, Jan. 12

STOCKS of gasoline at refineries declined in November 27,074,070 gallons, according to the Bureau of Mines and on Dec. 1 stood at 1,125,300,-167 gallons. The significant fact of this report is that the decline in stocks was the first in any November since the Bureau of Mines began keeping statistics on refinery operations. This decline was also in face of the fact that runs of crude oil to stills in November was 35,000 barrels greater on the daily average than in October and 156,000 barrels greater than in November, 1923.

Domestic consumption of gasoline totaled 697,971,431 gallons, a daily average of 23,260,000 gallons, or only 4.4 per cent less than the daily average consumption in October. The decline in consumption in November 1923, was 12.9 per cent under the October, 1923, consumption. Exports were 97,851,000 gallons as against 95,492,000 in October but imports also increased totaling 11,-958,000 in November as against 95,492,000 in October.

Kerosene Stocks at Peak

Production of kerosene in November was reported to the Bureau as 234,000,-000 gallons, a daily average of 7,800,000 gallons and an increase of 4 per cent over the daily production of the previous month. Stocks increased 29,000,000 gallons to a high figure for the year of 337,000,000 gallons. This increase in stocks was due to the falling off in exports from 90,000,000 gallons in October to 67,000,000 gallons in November.

Production of gas and fuel oils was 1,134,000,000 gallons, a daily average of 37,800,000 gallons and an increase over the daily average production of the previous month of 400,000 gallons, or 1 per cent. Stocks of these oils on hand December 1 were 1,641,000,000 gallons, an increase over the previous month of 30,000,000 gallons.

Production of lubricants was 95,000,-000 gallons. Stocks on hand December 1 were 242,000,000 gallons, the lowest for the year and a decrease from the previous month of 6,000,000 gallons. Domestic demand increased 8,000,000 gallons during the month to 70,000,000 gallons. This represents a daily average of 2,330,000 gallons, the highest for the year and an increase of 17 per cent over the daily average consumption for the previous month.

Production of paraffin wax was 43,000,-000 pounds, an increase of 2,000,000 pounds over the production of the previous month. Exports and domestic demand both dropped off and stocks were increased for the first time in over two years. Stocks on hand December 1 stood at 92,700,000 pounds.

The Bureau of Mines received reports from 280 refineries, with an aggregate daily crude oil capacity of 2,313,627 barrels, running to stills a daily average of 1,834,306 barrels of both foreign and domestic crude oil, or 79.3 per cent of their daily operating capacity. This represents an increase of 1.5 per cent over the refinery operations of the previous month and an increase of 0.3 per cent over the operations of November, 1923.

Cornplanter Founder Dies At Warren

WARREN, Pa., Jan. 10.—Edward E. Allen, for years one of the conspicuous figures in the oil industry in northwestern Pennsylvania, died of pneumonia at his home here Jan. 7. He had been ill since New Year's. He was 62 years old.

Mr. Allen was one of the organizers and for years treasurer and general manager of the Cornplanter Refining Co. He was with it until it was sold to the Pure Oil Co. He was a charter member of the National Petroleum Association and was a familiar figure at its meetings until the last few years when he has not been actively engaged in the oil business. He attended the last annual meeting, having been in Atlantic City while it was in session.

Mr. Allen was treasurer of the Riverside Acid Works and president of the Warren Axe & Tool Co. of Warren. He was also associated with his son Chester S. Allen in the Warren Oil Co. Among other companies with which he was connected was the Cherokee Oil & Gas Co. whose properties were sold to a Tide Water Oil Co. subsidiary.

Although he had never held public office, Mr. Allen took a great deal of interest in civic affairs. He was president of the Warren Chamber of Commerce for several years and was one of the chief factors in making Warren a pretty little city.

Two daughters, Mrs. Frances Langhans and Mrs. Mildred Carter, besides the son, survive him. The funeral was conducted yesterday by the Rev. R. M. Kistler of the First Presbyterian church of which he was a member.

CORRECTION

On page 17 of the January 7, 1924 issue, an error caused a statement regarding the Reagan County Crude Oil Purchasing Co. to read that its contract with the Big Lake and Texon companies provided for $2,500,000 of preferred stock in which the E. W. Marland interests would have 51 per cent. To have been correct the statement should have read that $2,500,000 of preferred stock is held by the Marland interests to be retired out of earnings of the purchasing company. When that amount, or any other amount advanced by Marland, shall have been retired from profits of the company, then the Big Lake and Texon companies will come into 49 per cent of the 10,000 shares of no par common stock. Marland will have 51 per cent of the common stock.

L. L. Coryell Sells Ont To Mutual Oil Co.

Staff Special

CHICAGO, Jan. 13.—Coryell & Son, one of Nebraska's old and well established jobbing firms, has sold out to the Mutual Oil Co. with headquarters at Denver. The consideration has not been made public.

Coryell & Son has headquarters in the Terminal building, Lincoln, but it operates no stations in the town, the outlets being through plants in 10 smaller towns.

Oil men in Chicago familiar with conditions in the Rocky Mountain refining and marketing field state that the Coryell outlet gives the Mutual a very strong and enviable position in the trade.

Rumor has it that Coryell & Son wish to retain part of their oil interests and sold only nine stations to the Mutual keeping their plant at Beatrice which they will continue to operate.

There being two Coryell firms in Lincoln, they should not be confused because only one of them sold its property. Coryell & Son, the firm that sold to the Mutual, consists of L. L. Coryell and his son, Leland The other firm is called the Coryell Oil Co. and has headquarters at 1445 O st., Lincoln. It consists of George Coryell and his son Earl and they market in Lincoln only. The senior Coryell men are brothers.

New Well in Trenton

NEWARK, O., Jan. 10.—The Wehrle interests, of Newark, have brought in their second producer well in the deep Trenton sand. They drilled in the first well in this formation early in 1924, opening the first Trenton sand pool in central Ohio. The new well swabbed 90 barrels the first 24 hours. Top of the sand was found at 4,354½ feet and drilling continued to 4365 feet. This well is about midway between the first well and the well of the Pure Oil Co. The pool has only three producing wells and two failures have been drilled.

CHEYENNE, WYO., Jan. 9.—Aero Oil Products Co. of this city has purchased the Park to Park Filling Station at Wheatland, Wyo., from Clarence Farnsworth, according to Lowell Clark, representative at Wheatland for the Continental Oil Co.

Crisis In Crude Market Approaching As Production Continues Down

By A. F. Hinton

STAFF REPRESENTATIVE

TULSA, Jan. 10.

FOR the third successive week we are pleased to record a very substantial drop in Oklahoma crude production. This latest decline brought the state's daily average for the week down to 474,034 barrels, as compared with 482,495 barrels the preceding week, a decline of 9,461 barrels. This is actually the fifth week in succession in which Oklahoma production has declined, but the loss has been very marked only during the past three.

Since the week ending Dec. 6, Oklahoma production has dropped from 527,689 barrels to the figure given above, a total decline for the five-week period of 54,655 barrels, or more than 10 per cent. The state's output is now lower than it has been at any time since the early part of last summer, and, as far as can be seen now, is headed for still further declines.

With crude production dwindling rapidly and the gasoline market remaining strong, the crude market situation apparently is rapidly approaching a stage where something is going to happen. Although the actual payment, or offering, of premiums does not seem to be gaining, there are reasons to believe that this method of obtaining crude will be in full bloom within a very short time, and that well-known term "a scramble for crude" will have to be dusted off and set up again where we can reach it easily each week.

Refiners are undoubtedly becoming anxious as to their crude supply during the coming months, and this anxiety is by no means lessened by the precipitate decline in production during the past few weeks. Producers are fully alive to this situation, but are showing a decided tendency to stay hitched to their present connections until offered a very substantial consideration for changing over.

In other words, the refiner is faced with the necessity of obtaining crude on a market becoming momentarily tighter, and he is also beginning to be faced with the realization that the only way he can get it is to pay so heavy a premium that the producer will be tempted away from his substantial big-company connections. And then, as soon as premiums reach this point, and the big companies actually begin losing connections in considerable numbers, the posted price of crude will go up, which is just the thing the average refiner does not hope for, at present prices of gasoline.

Connections Hard to Get

It is reported that refiners have been making every effort to refrain from the payment of premiums, but it has become apparent that, unless they do pay them, they have very little chance of securing any considerable amount of crude. The larger purchasing companies report that they are not losing connections, nor are they able to get them, except in the case of new wells here and there. They are actively in the market for crude, and will connect to any well within a reasonable distance of their gathering lines. To lay four or five miles of line to a single well to run the oil is by no means uncommon.

Most producers believe firmly that crude prices will advance within the next few weeks, and are convinced that they would have advanced ere this had it not been for the coming of the Wortham field. Believing that, they are disposed to stay with the big buying companies rather than to switch to some other purchaser for a small bonus over the regular posted price. The producer wants the best price he can get for his crude, but he also wants assurance of the steady market, uniform service, and large facilities offered him by the big crude buyers.

Apparently we are again approaching the stage where the refiner in his search for crude, will force the market up whether the major purchasing agencies are ready to advance prices or not. This may bring about higher crude prices within the next 30 days, depending upon the scope attained by premium-paying in the meantime. It is probably safe to say that, lacking this compulsion, crude prices could not be expected to advance before March 1.

Certainly higher crude prices than those now prevailing must prevail before there is any concerted action on the part of producers toward a drilling campaign to uncover new oil deposits. The number of drilling wells in Oklahoma has been decreasing steadily for several months, with most of the recorded activity confined to actual proven fields, rather than in wildcatting. Granting that there are many major fields yet to be developed in Oklahoma, and that many companies have large amounts of reserve acreage practically certain to prove productive, it is certain that they will not be explored or developed at present prices for crude.

Until such a drilling campaign does take place, and presuming that it will result, as it always has, in the finding of quantities of new oil it does not seem likely that Oklahoma production will increase. In fact its tendency probably will be definitely downward, although at a much slower pace than that shown by the sudden drops of the past few weeks. If this proves to be the case, then spring will find Oklahoma in the throes of a real scramble for crude, with all the big buyers, as well as the smaller refiners, participating, and crude prices then advanced will tend to remain on an upward trend until new fields are developed.

Current Production

In order to bring about the decline of 9461 barrels in Oklahoma production during the past week, all the principal fields in the state participated in a general downward movement with the exception of Cromwell, which just barely managed to hold itself on the favorable side of the ledger. The Bristow area, which includes the Depew, Continental, Slick, Kelleyville, and Bristow pools has been declining rapidly of late, and during the past week went off 2700 barrels to a daily average of 37,400 barrels.

The next largest contributor to the decline was Papoose, which has been getting some undesirable notoriety recently in the way of dry holes, holes full of water, etc., and which does not present quite such an aspect of a budding

Decline of Oklahoma Production Last Five Weeks

Week Ending	Burbank	Cromwell	Tonkawa	Wewoka	Papoose	Total State
Dec. 6	71,080	47,104	107,945	12,990	30,070	527,689
Dec. 13	70,840	46,380	105,505	12,345	31,160	525,540
Dec. 20	69,400	43,025	106,336	12,230	32,720	520,876
Dec. 27	64,850	37,475	98,890	12,950	30,740	494,905
Jan. 3	60,225	34,620	96,600	12,100	28,960	482,495
Jan. 10	59,190	34,635	95,899	11,000	27,410	474,034

major pool as it did a few weeks ago. This field reported two new wells, bringing its total to 76, but declined 1550 barrels in production, its daily average having been 27,410 barrels.

Wewoka declined 1100 barrels to a daily average of an even 11,000 barrels, from 102 wells, the same as last week. Burbank reported a gain of three wells, bringing its total to 1665, but lost 1035 barrels in output, dropping to 59,190 barrels daily. Tonkawa averaged 95,899 barrels a day over the week a loss of 1001 as compared with the preceding week and reported two new wells, bringing the total to 731. Cromwell had two new wells completed during the week, its total now being 239, and gained 15 barrels in production, to a daily average of 34,635 barrels.

Stroud which now has 66 wells, the same as for the last two weeks, averaged 2735 barrels daily, a gain of 25 barrels over the preceding week. The Braman field, in northwest Kay county, just south of the Oklahoma-Kansas state line, averaged 2045 daily from seven wells. The Otoe, or Watchorn field, in western Pawnee county, made about 8050 barrels daily, as compared with better than 10,000 barrels two weeks ago.

Tonkawa deep wells increased in number from 63 to 67 during the week. That number, however, represents the total completed, including five which are not now producing. The deep wells wound up the week producing about 3000 barrels more than at the start, two new wells brought in at the close of the week having boosted the output considerably. The deep sand production averaged 77,539 barrels daily during the week, as compared with 78,242 barrels the week preceding, a decrease of 703 barrels. Performance of these wells by days during the week was as follows:—

	Production	No. Wells	Average Per Well
Jan. 3	76,552	63	1200
Jan. 4	75,308	63	1195
Jan. 5	76,631	64	1197
Jan. 6	76,085	65	1170
Jan. 7	79,072	65	1218
Jan. 8	79,481	67	1188
Jan. 9	79,642	67	1187

Wells Completed

The past week was another comparatively lean one as far as well completions are concerned, there having been only 43 completions reported, of which 25 were oil wells, six were gas wells, and 12 were dry holes. This is a slight increase over the preceding week, when there were 40 completions, divided 24 oil wells, four gas wells, and 12 dry holes. The number of completions has been considerably reduced owing to the fact that many wells which would have been drilled in by now were shut down during the cold snap, and either have not started up again or are ten days or two weeks behind in their drilling time.

The 25 wells included in this week's report had a total initial production of 8486 barrels, with an average per well of 339.4 barrels. This is only a very slight change from last week, when 24 wells brought in 8367 barrels of new pro-

Drilling Operations in Oklahoma, Kansas and N. Texas Jan. 10

	Jan. 10 Week Ending					Jan. 3				
	Loc.	Rigs	Drg.	S.D.	Total	Loc.	Rigs	Drg.	S.D.	Total
Oklahoma										
Burbank	8	6	9	3	26	6	...	14	2	22
Other Osage	6	13	22	38	79	10	11	34	24	79
Bristow-Cushing	12	21	61	49	143	13	20	61	55	149
North Oklahoma	7	20	67	75	169	11	21	69	68	169
South Oklahoma	9	16	77	84	186	9	10	81	84	184
Muskogee	..	10	22	39	71	...	9	9	48	66
Okmulgee-Bristow	4	60	62	57	183	4	56	79	49	188
Tonkawa	6	7	55	14	82	6	7	56	15	84
Wewoka-Cromwell	12	41	225	56	334	14	38	230	57	339
Total Oklahoma	64	194	600	415	1273	73	172	633	402	1280
Kansas	33	62	129	234	458	43	61	155	213	472
N. Texas										
Eastland County	..	...	19	8	27	...	...	16	9	25
Stephens County	..	14	22	33	69	...	12	20	38	70
Texas Panhandle	5	4	15	25	49	...	6	8	35	49
Mexia District	..	107	190	42	339	...	145	217	3	365
E. Texas Wildcats	..	9	3	35	47	...	7	6	40	53
W. Texas Wildcats	..	20	46	98	164	...	19	57	81	157
Wichita Falls	..	85	109	86	280	...	66	94	94	254
Total N. Texas	5	239	404	327	975	...	255	418	300	973
Grand Total	102	495	1133	976	2706	116	488	1206	915	2725

Completions In Oklahoma And Kansas Week Ending January 10

OKLAHOMA

Carter County

Company	Well No.	Description	Depth	Init. Prod.
Magnolia	1	C SE SW SW 18-1S-3W	3186–3208	5
Schermerhorn	5	C NE SW SW 32-2S-2W	2529–2532	180
Amerada	3	SE NE SE NW 28-5S-1E	1175–1188	110
Coline	37	C SE SE NW 4-4S-3W	T. D. 3205	Dry

Creek County

Sinclair	6	NWc NE SW NE 16-18N-7E	T. D. 3009	Dry
McLean et al	3	NEc NE NW NE 18-18N-11E	T. D. 1736	Dry
Lima	2	SEc NW NE 24-17N-8E	2752–2766	8½M
Roland	2	NWc NE NE 25-17-8E	2700–2740	3M
Nowata	2	SWc SE NW 16-16N-9E	3027–3044	60
Noble	1	NEc NW 20-14N-10E	3387–3390	380

Creek County—Mounds

Hall-Crider	1	SEc SW NE SW 8-16N-12E	2067–2095	40

Grady County

Little Nick	2	CEL NE SE 26-5N-8W	T. D. 2490	45M

Hughes County—Papoose

Slick	3	CNW NW NE 3-9N-9E	3296–3320	400
Slick	1	C NW NE NE 3-9-9	3299–3322	1255&15M

Kay County—Braman

Comar	1	CNW SW SE 21-29N-1W	1941–1942	116
Comar	1	C SW SW NE 21-29-1W	2058–2079	343
White Eagle	1	C NW NW SW 22-29-1W	2027–2033	130

Kay County—Tonkawa

Amerada	39	C NW NW NE 34-25-1W	4142–4179	2300
Phillips	6	C SW NE NE 34-25-1W	4031–4067	802

Kay County

Prairie	1	SWc SE 1-26N-2W	2500–2508	28M

Lincoln County

Cook	1	SEc SW SW 15-15N-6E	3003–3070	25
Magnolia	1	NWc SW SE 18-14N-5E	T. D. 4625	Dry

McIntosh County

King	2	NWc NE NW 14-11N-13E	T. D. 2412	Dry

Okmulgee County

Eastern	8	SWc NE SW 25-13N-11E	2457–2461	300
Mueller et al	1	SWc NE SE 25-14N-12E	T. D. 2754	Dry

Osage County

S. S. Home	3	SEc 21-20N-11E	T. D. 2250	Dry

Osage—Burbank

Phillips	11	C SW NE NE 14-27N-5E	3008–3059	50
Texas	9	C SE NE NW 18-27-6E	2922–2981	200

Payne County

Josey	1	SWc SW SW 36-19N-5E O.W.D.	2781–2868	6M
Shaffer	9	NWc NW NE 2-17N-5E O.W.D.	3263–3270	8M
Carter	1	SWc SE NE 17-19N-6E	T. D. 3167	Dry

Seminole—Cromwell

Waite Phillips	6	C NE NW SE 4-10N-8E	3486–3500	480
Cosden	6	C NW NE SW 4-10N-8E	3409–3471	150
Roxana	3	C NW SE NW 10-10-8	3303–3485	40 & 50M
Cosden	7-W	C NE SE SE 15-10-8 O.W.D.	3490–3526	980

Seminole—Wewoka

Magnolia	2	C SW SE SE 30-8N-8E	3239–3247	90
Magnolia	1	SEc NW NW 32-8-8	3207–3217	70
Southwestern	1	SEc 2-8-8E	T. D. 3488	Dry

Tulsa County

S. S. Home	7	SWc SE SW 6-19N-12E	2118–2127	25
Mallory et al	7	NEc SE NW 15-16-14E	1655–1725	15
Enfisco	13	CWL SW SW 16-17N-13E	T. D. 1715	Dry

Wagoner County

H. H. Orr	2	C SE SE 7-17N-16E	T. D. 1102	Dry
Swanson	2	SEc SW SW NE 34-17N-18E	T. D. 454	Dry

KANSAS

Cowley County

Alcorn	1	NEc SW 29-30-5E	T. D. 3380	Dry

Greenwood County

McGinnis	1	SEc SW NE 13-22-10E	2090–2149	180
York State	6	NWc NE SW 32-22-11E	1931–2007	30
McGinnis-Bittler	2	NWc SE NW 15-23-9E	2305–2355	350

Labette County

Whitney et al	1	SEc 36-33-19E	T. D. 1075	Dry

Montgomery County

Pennant-Goldrick	1	SWc SE SE 19-31-16E	T. D. 1385	Dry
Nelson et al	2	NWc 25-34-13E	T. D. 1782	9½M
Smith-Thomas	1	NWc 3-33-14E	T. D. 1718	Dry
Roth-Faurot	1	NWc SW SE 12-33-16E	T. D. 1452	Dry
Harwood Hazlett	2	SWc NW SE NE 12-33-16E	T. D. 1337	Dry
Homer Lamb	1	SEc NW 12-33-16	T. D. 1424	Dry
Empire	2	NWc SE 12-33-16	T. D. 1429	Dry
Fisher-Lauck	1	SWc 10-34-16E	T. D. 1508	Dry

duction, with a per-well average of 348.6 barrels.

Completions reported from Kansas this week totaled 13, of which three were oil wells, one was a gas well, and nine were dry holes. This is an increase over last week, when there were only seven Kansas completions, divided three oil wells, one gas well, and three dry holes. The three oil wells reported this week totaled 560 barrels initial, giving them an average of 186.7 barrels per well. Last week, three wells accounted for 310 barrels of new production, averaging 103.3 barrels each.

Donahoe Well Drilled Deeper

The J. L. Donahoe et al. No. 1 Zoldoskie, in the NWc SE¼ of 22-23-4E, Pawnee county, which found the Wilcox sand in a wildcat test, was deepened three feet during the week, and is now making better than 500 barrels daily. It is now three feet in the sand topped at 3717 feet, and was flowing about 175 barrels before being deepened. The F. & N. Oil Co., one of the Humphreys-Fohs-Newblock interests, is rigging up for a diagonal northwest offset to the Donahoe well, their location being the SEc NW¼ of 22-23-4E. This company has an 80-acre lease comprising the E½ NW¼ of the section.

An interesting feature of the week's news was the finding of the twelfth producing sand in the Garber field, Garfield county. A deep test being drilled by the Sinclair Oil & Gas Co., known as its No. 25 Belveal, in the NEc of 24-22-4W, picked up the new sand at 3317 feet, at which point the hole filled up about 1500 feet with very high gravity oil. After swabbing about 100 barrels, the well was drilled on down and went out of the sand at 3323. It is now drilling ahead and is reported to have picked up another good-looking sand at around 3350 feet. This sand, however carried no oil.

The sand found at 3317 feet is believed to correlate with the 2600-foot sand in the Tonkawa field, and there is therefore reason to believe that deeper production may be found. At the difference in depth to the Tonkawa sand, the Wilcox would be found at around 4800 feet. The Garber field has 11 producing sands, running from 1100 to 2300 feet in depth, not including the new sand, which was found 1000 feet below the lowest previously known producing horizon in the field.

Another deepening process resulted in a good well in the Sand Springs Home test on the Brown farm, located in the S½ NW¼ of 5-19-12, in the Vern-Burner area just west of the Tulsa city limits. This well had only a small showing in the Wilcox sand, but drilled on down 40 feet to what is believed to be the Turkey Mountain sand and came in making about 1000 barrels. This is a narrower margin than usual between the Wilcox and Turkey Mountain formations, the ordinary interval being from 60 to 80 feet, or more.

Texhoma Extends Line To Young County

By Special Correspondent

FORT WORTH, Jan. 10.—Extension of the Texhoma Oil & Refining Co.'s South Archer lines into Young county to care for the recently opened pools and extensions, began this week.

Operations are still hampered by a lack of drilling water in this section, but even with this difficulty there were several good completions, and one semi-wildcat which gives promise of another of the extensions which have characterized developments in the South Archer-North Young county field for months. This latter is the Pois and Johnson No. 1 Deitrich, two miles east of the Murchison and Fain No. 1 Gambrell, a sensation of Christmas week. The Pois et al well got the sand at 1,180 and is now testing.

In the South Vernon, Wilbarger county field, there were two good completions. The Bridwell and Heydrick No. 3 Stephens, previously reported as opening up a new sand, at 2300 feet, is producing at the rate of 375 barrels daily, after some trouble with casing. Ray and Massie's No. 2 Bond is making 600 barrels from the sand 1,986 to 2010.

The Tidal Oil Co. and the Hoffer Oil Co. have bought the Camp well on the R. Campbell, which opened up a nice stretch of territory eastward from the producing area in North Young a few weeks ago. The purchase price for the well and 120 acres, was not made public.

Shongaloo Test Comes In As Dry Gasser

By Special Correspondent

SHREVEPORT, LA., Jan. 8.—The Bethany Oil & Gas Co.'s No. 2 Wiley, in 6-22-9 of the Shongaloo District in Webster Parish has been completed as a large dry gasser from a total depth of 2,654 feet; elevation 223. This test, being located about midway between the famous Gleason and Mayfield wells, which sprayed oil, had aroused considerable interest among local operators, many of whom hold the opinion that the Shongaloo structure has an equally good chance of producing as much or more oil from its flanks or lower levels than does the Cotton Valley structure, where dry gas wells and sprayers are completed on the crest of the structure and oil wells on its flanks. However, the Wiley well encountered the sand about 10 feet higher than the Sinclair-Mayfield well and about 25 feet higher than the Louisiana-Gleason wells; and, accordingly, yielded only dry gas.

The next important test in this potential area is likely to be made in the Louisiana Oil Refining Corp.'s Armor No. 1, located in 21-23-9, now drilling below 1200 feet. It is located about one mile east of the Mayfield well, along a structural nose thought to extend from the crest of the Shongaloo structure toward the Haynesville Field, in the adjoining township.

The Southwestern Extension to the Cotton Valley Field has been extended one location farther south by the completion of the Humble Oil & Refining Co.'s Bodcau Lumber Co. No. B-10, located in the southwest corner of the NW¼ SE¼ of 28-21-10. The well is being blown with gas, and is making around 500 barrels of clean oil per day from seven feet of sand at a total depth of 2585 feet.

The Palmer Corp.'s Miller deep test, in 29-21-10, along the southwestern boundary of the Cotton Valley Field, has been bailed dry in what is thought to be the Woodbine sand at a total depth of 3461 feet. Six-inch casing was set at 3450 feet. Drilling probably will be continued until oil or salt water is encountered.

Completing Large One In Reagan County

FORT WORTH, Jan. 10.—Reagan county's fourteenth producer is now in process of completion. The Texon Oil & Land Company's No. 3, Group 1 University lands, started flowing at the rate of 100 barrels an hour when 5 feet of sand was drilled. Sand was topped at 2923.

The No. 3 is a north offset to the No. 2 Group 1, and indicates a rise in the structure to the north. A good show was encountered around 2500 feet. The new well will be drilled deeper some time this coming week.

Increase in San Joaquin Fields

LOS ANGELES, Jan. 8.—San Joaquin Valley oil fields produced 7,617,989 barrels more of crude oil in 1924 than in 1923. The output was 71,346,584 barrels against 63,728,595 barrels, for the year, and the increase was due in large measure to the fact that hundreds of small pumpers in the valley, which were shut in during 1923 because of flush production in the Los Angeles basin fields, were producing last year. The number of active wells in the valley at preesnt is 6978.

FORT WORTH, Jan. 10.—A 500-foot well with a natural flow of 100 barrels was completed this week in the shallow pool six miles south of Albany, Shackelford county. The well is the No. 4 Alexander of J. T. Hogan, and is the third well of similar unusual size for this depth, to be completed on this lease in the last several months.

OKMULGEE, Jan. 10.—A. W. Dustin, formerly consulting geologist, has been appointed chief geologist for the Independent Oil & Gas Co., with headquarters in Okmulgee.

Builds Large Department

TULSA, Jan. 12.—The recently-organized geological department of the Prairie Oil & Gas Co., which is occupying offices on the eighth floor of the Exchange National Bank building here, has expanded until it now has a roster of nine men. R. M. Gawthrop is chief geologist. His staff consists of L. M. Oles, who has been with the Prairie for some time, acting as scout; Clyde S. Miller, formerly engineer of the Producers & Refiners Corp.; W. D. Miller and J. T. Graves. Recent additions to the force include Max L. Krueger and Paul S. Oles, who were transferred from the Denver office of the Producers & Refiners Corp., and Raymond A. Whortan and Edgar L. Runyan, transferred from the Prairie office in Independence.

TULSA, Jan. 9.—A. F. Truex, formerly chief geologist of the F. & N. Oil Co., is now a member of the geological staff of the Twin State Oil Co.

Gulf Coastal Texas Completions, Week Ended January 10

Company	Lease—Well	Field	Depth	Prod.
Rycade Oil Corp.	State E-8	Orange	4900	3000
Gulf Production Co.	Chapman-Bryan 8	Goose Creek	4300	200
Humble Oil & Refining Co.	Pitkin-Lee 12	West Columbia	795	Aband.
The Texas Co.	Abrams 9 (workover)	West Columbia	4525	20
Texas Exploration Co.	Fitzsimmons 6	Pierce Junction	3500	5000 60% water
Gulf Production Co.	Taylor 9	Pierce Junction	3800	1800
Humble Oil & Refining Co.	Hannah B-1	Hull	3475	S.W.
Republic Production Co.	Dolbear 97	Hull	1565	Pumper
The Texas Co.	Gray A-1	Vinton, La.	3225	75
Seiss Oil Synd.	Green 5	Vinton, La.	2350	25
Edgerley Petroleum Co.	Vincent 1	Vinton, La.	3065	30
Wilson-Broach Oil Co.	Parks 6	Vinton, La.	2810	S. W.

Completions in North Louisiana and Arkansas Week Ended January 8

LOUISIANA

Spring Hill

Company	Well	Location	Depth	Yield
Ark. Fuel Oil Co.	Frazier No. 1	27-23-11	2683	Aband.

Cotton Valley

Alabama Pet. Co.	Pardee B-1	24-21-10	2524	110
Humble O. & R. Co.	Bodcaw B-10	28-21-10	2587	500
Ohio Oil Co.	Bodcaw No. 12	27-21-10	2563	10 m gas
Humble O. & R. Co.	Bodcaw B-9	28-21-10	2583	25 m gas

Morehouse Parish

Stovall et al.	Fee No. 1	27-21-4E	2230	15 m gas
United O. & Nat. Gas Co.	Cole No. 2	36-20-4E	2185	25 m gas

Ouachita Parish

Palmer Corp.	Morgan No. 2	21-19-5E	2195	10 m gas

TEXAS

Waskom—Harrison County

A. R. Carmody	Bryson No. 1. E. M. Jenkins HRS		1012	10 m gas
Morefield & Tanner	Vinson No. 1. J. Lipscomb HRS		985	15 m gas
State Line O. & G. Co.	Furrh No. 1. J. Lipscomb HRS		945	25 m gas

Panola County

Magnolia Pet. Co.	Hudson No. 1. W. H. Lacy HRS		1007	10 m gas

Caddo Parish, La.

Gulf Ref. Co.	Ferry Lake No. 219	22-20-16	2285	75

ARKANSAS

Nevada County

Company	Well	Location	Depth	Yield
Ames et al.	J. R. Woamack No. 1	10-14-21	1175	100

Smackover

H. E. Clark et al.	Smith No. 2	26-15-17	2405	50
Hunt et al.	Anderson B-7	23-15-17	2295	150
Hunt et al.	Green B-5	23-15-17	2330	500
James S. Smith	Shirey B-1	36-15-17	2290	50
Marr et al.	Mullin No. 3	28-15-16	2270	50
Mazda Oil Co.	Finceer No. 2	29-15-16	2275	30
J. B. Ross	Shirey-Berg No. 1	28-15-16	2260	50
Roxana Pet. Co.	Snyder No. 2	34-15-15	1955	80
Simms Oil Co.	Berg E-2	30-15-15	2025	160
East Oil Co.	Thompson No. 1	5-17-15	2265	dry aband.
Field Operators Co.	Kane No. 1	12-16-16	2023	dry aband.
Howell et al.	Williams No. 1	3-16-15	1990	125
Houston Oil Co.	Hinton No. 3	5-16-15	2230	30 m gas
Marine Oil Co.	Hays No. 3	4-16-15	1970	175
Marr et al.	Dumas No. 1	15-17-16	2143	Aband.
Penguin Oil Co.	Berry No. 3	18-16-15	2063	50
Pure Oil Co.	C. Hicks No. 1	20-16-15	2115	50
Rutlege, trustee	Carruth No. 1	7-16-16	2405	Aband.
Sunny Jim Oil Co.	Flenniken No. 2	9-16-15	2080	25
Texas Oil Co.	McAdoo No. 1	15-16-16	2600	35
Nye Wilson	Hays No. 4	4-16-15	1995	175
Gulf Refining Co.	M. Alphin No. 6	2-16-15	1990	80

Completions North-Central and West Texas Week Ending January 10

WICHITA FALLS DISTRICT

Wilbarger County

Company	Well No.	Lease	Depth	Prod.
Winnipeg Oil Co.	4	Bond	2060	230
Bridwell and Heydrick	3	Stephens	2290	375
Bridwell and Heydrick	2	Dill	1285	130
Magnolia Petroleum	46	Sumner	1155	50

Wichita County

Petroleum Producers	2	Kemp and Allen	1645	100

Archer County—North

Gulf Production Co.	7	A. P. Nichols	1550	130
Camp Oil and Gas	1	E. M. Hughes	600	Aband.

Archer County—South

Murchison and Fain	8	Griffin	1305	300
Murchison and Fain	9	Griffin	1305	300
Murchison and Fain	5	Harmel-C	1280	210
Gulf Production Co.	1	T. L. Griffin-A	1310	160
Gulf Production Co.	1	J. F. Rogers	1305	60
Alford et al.	1	Anderson	920	Aband.
Gulf Production Co.	5	Oil Investment Co.	1105	530
Consolidated Oil Co.	7	C. L. Davis-A	1085	40
Consolidated Oil Co.	8	Ragle-B	1100	200
Humble Oil and Refng.	3	Ragle	1095	20
Shamrock Oil Co.	17	Goldsmith	1330	100
The Texas Co.	3	Jeske	1155	20
Ray and Featherstone	9	Hausler	1100	100
Ray and Featherstone	12	Hausler	1120	100
Petroleum Producers	1	Hausler	1130	310
Petroleum Producers	3	Birdwell	1130	450
Petroleum Producers	4	Birdwell	1135	110
Shaw and Rathke	1	Hayter	1320	145
Vance et al.	1	Falls County School Lands	1050	Aband.

Baylor County

Magnolia Petroleum	2	Portwood	1415	8

Montague County

Petroleum Producers	1	C. H. Howard	1430	75

Young County—North

Simms Oil Co.	1	Carpenter	1025	110
Heatherly and Chambers	1	Heatherly	1400	Aband.
Jones et al.	1	Jeffery	1500	Aband.
Jeffrs and Newby	1	West	1600	Aband.

GENERAL RANGER TERRITORY

Stephens County

T. & P. Coal and Oil Co.	2-B	Winston	2225	12 m ft. gas
Cobb et al.	1	Summerour	1840	Aband.

Shackelford County

J. T. Hogan	4	Alexander	550	100

Eastland County

Company	Well No.	Lease	Depth	Prod.
Root et al.	1	Ammerman	3225	80

Callahan County

Kellog Drilling Co.	1	Snyder	2510	Aband.

Brown County

Mahlstadt Mook	3	Newton	1300	50

WEST TEXAS

Reagan County

Texon Oil and Land Co.	3	University, Group 1	2923	100 bbls. an hour initial

Mitchell County

The California Co.	5	Miller	3015	60
The California Co.	1	Clark	3060	200

EAST CENTRAL TEXAS

Powell

Pure Oil Co.	1	Webster	3070	Aband.
Pure Oil Co.	9	Kent	1570	15
Andrews Petroleum Co.	2	Williams	3110	Aband.

Wortham

Boyd Oil Co.	2	Ferguson	3020	1600
Boyd Oil Co.	6	Simmons	2960	2500
Boyd Oil Co.	5	Simmons	2965	3600
Oxford Oil Co.	1	Morrow	3000	2500
Mutual Oil Co.	1	Manning	3030	Aband.
Gulf Production	1	H. F. Ferguson	3015	770
Humble Oil and Refng.	1	E. D. Crouch-A	2990	7300
Humble Oil and Refng.		Ella Dodd	3015	2000
Humble Oil and Refng.	1	Lindley	2985	6000
Humble Oil and Refng.	2	R. G. Poindexter	3012	8000
Humble Oil and Refng.	1	Ferguson	2980	4000
Humble Oil and Refng.	2	E. D. Crouch-A	3033	Aband.
Rio Bravo Oil Co.	1	Right of Way	3000	5000
Rio Bravo Oil Co.	2	Right of Way	3000	3600
Rio Bravo Oil Co.	4	Right of Way	2990	5000
Kirby Petroleum Co.	1	Chancellor	3005	8000
Pure Oil Company	2	S. T. Bounds	2970	5000
Moss and Keeling	1	Simmons	2980	2500
Simms Oil Co.	1	Calame	3015	7800
Simms Oil Co.	2	Calame	3015	2700
Simms Oil Co.	2	Simmons	2975	5000
Simms Oil Co.	3	Simmons	2965	4000
J. K. Hughes	1	E. D. Crouch	2995	5000
Atlantic Oil Prod. Co.	1	Edwards	3020	Aband.
Atlantic Oil Prod. Co.	1	Simmons	2990	2600
Strube and Strube	1	Lindley	2987	3800

Lakota Sand Test In Salt Creek Field Flowing More Than 4500 Barrels

DENVER, Jan. 10

By Special Correspondent

WYOMING operations took on a renewed interest this week due to a variety of factors. One of the most important of these was the resumption of drilling on No. 33X of the Midwest Refining Co. on 35-40-79, in the Salt Creek field, on a lease of the Mountain Producers Corp. This is the third of the three deep tests to the Lakota sand put down by the Midwest.

This well opened up a considerable flow of gas early in December in the Dakota sand at 2262 feet. This sand was thin and unimportant in No. 34X two miles to the north which came in last summer with an initial production of 6000 barrels in the lower Lakota accompanied by considerable water.

The gas in the Dakota in No. 33X was especially encouraging but drilling was hampered by difficulty in mudding off the flow. This was finally accomplished and drilling was resumed. When the hole was bottomed 28 feet in the Lakota sand, the well was flowing about 2000 barrels a day and making 10,000,000 cubic feet of gas. This compares with 800 barrels a day from the same horizon in the well two miles to the north. Upon being deepened an additional 12 feet, the flow had increased to 3200 barrels. The hole at that point was bottomed at 2308 feet. The flow is increasing and at this writing is at the rate of 4680 barrels a day. The sand is known to be 100 feet and the drill will be sent to the bottom. In the test to the north there was a shale break four feet thick 37 feet from the top of the sand and it was after this break had been penetrated that the big flow came in. It begins to look as if this break is absent in No. 33X but, if present, the big flow is probably still to come. There is no water with the oil and as the well is 280 feet higher on the structure than No. 34X, it promises to be a much more satisfactory well.

First Wall Area Proven

The discovery is of immense importance to the oil industry in Wyoming as it practically proves the entire area of the first Wall Creek sand to be productive in the Lakota at a time when a supply of oil in this field is much desired. The three deep tests were intended to disclose what might be expected in the area of the first sand which embraces 4000 acres and as all three tests are producers, the prospects for the future are fairly well indicated.

The Texas-Kinney-Coastal deep test on 19-39-78, five miles south of the Midwest well, is bottomed in shale at 3770 feet where it is being cemented preliminary to drilling into the Lakota expected within the next 20 feet. This test had water in the Dakota and a showing of oil but since the test five miles to the north show that the Lakota is the producing horizon, there is still a good chance for the well. This well is 1100 feet lower structurally than the Midwest well.

Oil at North Casper

It begins to look as if the North Casper Creek dome, 28 miles north of Casper, is going to be a producer after numerous disappointments in the test being drilled by the Midwest Refining Co. on southeast corner of 36-37-82. The drill this week entered what is believed to be the Tensleep sand and with the hole three feet in the sand at 3205 feet, is commenced to flow. The fluid consists of about 90 per cent oil and 10 per cent water. Drilling has been suspended to make a shutoff of water from upper horizons.

The well was started last year. It has had water at intervals all the way down. A flow of 4,000,000 cubic feet of gas was encountered at around 900 feet in the Frontier but the sand contained water. At 1475 feet it made 4000 barrels of water from the Dakota. Last September the well created a sensation when it was reported flowing 10,000 barrels of black oil from the Sundance sand at 2020 feet. However, the flow was mostly water which was shut off and drilling continued. The present showing is either from the Embar or the Tensleep and below the red beds.

The structure has a closure of 1600 feet and is one of the largest in Wyoming. While the oil is of a heavy grade, the Casper refineries of the Standard Oil Co. of Indiana are equipped to handle black oil should the field become a commercial producer.

Sheldon Test Shows Oil

A test being drilled by the Mack Oil Co. on 15-5-2, Sheldon dome, Fremont county, cut a 10-foot sand just above the first Wall Creek this week at 2580 to 2590 feet and opened up a flow of 1,000,000 cubic feet of gas. It also showed some oil. The first Wall Creek is expected within the next 50 feet. This is the third test to be drilled on the structure. A test drilled last year by the Marine Oil Co. found two feet of oil sand in the top of the Wall Creek and water beneath. The log compared with the first well showed that it was on the flank of the dome and a third test was started a few months ago. The sand found this week shows that the well is 135 feet higher than the Marine test and has a much better chance for opening a commercial pool. Fremont county was extensively tested in 1917 and 1918 but no important pools were opened up though the Pilot Butte and Lander fields and some shallow pools are still producing small quantities of oil. It was in this county that oil was first discovered in Wyoming.

The Marland Oil Co. of Colorado is preparing to drill its first well in Wyoming. Location has been made for its Notches No. 1 on NE¼ of NE¼ of 10-37-85, Notches dome, Natrona county, southwest from Salt Creek.

Williams May Sell Properties

Negotiations are reported pending for the sale of the E. T. Williams Oil Co. holdings in Salt Creek to the Texas Co. The Texas Co. already owns an undivided half interest in the Williams properties through a deal made at the time the Texas Co. started construction on its refinery at Casper. The deal involves also the sale of the gasoline plant in Salt Creek owned by the Williams interests at a price to be determined after valuation. This plant cost $350,000. The Williams company owns a 51 per cent interest in the Central Pipe Line Co. which built the line from Salt Creek to Casper to supply the Texas refinery. Controlling interest in the line will also go to the Texas Co., leaving the Williams company with full ownership of the Omaha Refining Co., which has a refinery at Omaha, Neb., and a 26 per cent stock interest in the Central Pipe Line Co.

There is a growing tendency among operators to re-geologize structures which have been tested in the past with a view to putting down additional tests.

Completions Rocky Mountain District Week Ending January 3

WYOMING

Salt Creek

Company	Well No.	Description	Depth	Production
Wyoming Oil Fields	36A	26-40-79	1473	100
Wyoming Associated	4A	35-40-79	1450	555
Utah Oil Refining	23A	30-40-78	2135	Not tested
North Casper Creek				
Columbus Oil	1	22-36-82	3400	Aband.
Tisdale				
Midwest Refining	1	28-41-81	2675	Aband.
Neiber Dome				
Midwest Refining	1	13-45-93	4200	Aband.

COLORADO

Berthoud

Midwest Refining	1 State	16-4-69	4030	Aband.

The Ohio Oil Co. is starting a test on 19-18-77, Cooper dome, southern Albany county near the Colorado line. Utah Oil Refining Co. drilled two or three deep tests in that region several years go. Producers & Refiners is starting a test on 8-43-91, Murphy dome, Big Horn basin, where the Ohio drilled in 1918.

J. D. Cook and associates are starting a test on 29-14-76, Sodergreen structure, Albany county, where the Producers & Refiners abandoned a test a few years ago.

Utah Operations

Eastern Utah, along the Colorado boundry, all the way from Arizona to Wyoming, will see extensive wildcatting this year as a result of the opening of the gas wells on the Cisco dome in Grand county, several months ago by the Utah Oil Refining Co., and on the Garmesa dome, in Mesa county, Colorado, on Thanksgiving day by the Sun Oil Co. Both wells are making large quantities of gas from the Frontier horizon. The Utah company is drilling a second well one mile east of the Cisco gasser which is due to reach the sand within the next few weeks. It is lower on the structure and has a better chance for missing the gas and striking the oil.

Thirty miles south of that dome and on the Colorado river below Moab are 4 or 5 good looking structures which have been leased up and the Utah Southern Oil Co. and the Midwest Refining Co. will drill a joint test on the Cane Creek dome. Material is now being moved in. Farther to the south, in the old San Juan field, on the East anticline, the Utah Southern is starting a test to the Pennsylvanian while to the north of the Cisco well, on the Ashley Creek dome, near Vernal, in Uintah county, the Utah Oil Refining Co. is drilling a wildcat. In Daggett county, on the Wyoming boundary, the Producers & Refiners has a test down 4,000 feet on the Clay Basin dome. The whole area is being scouted.

Purchasing Agent For Gypsy Resigns

Staff Special

TULSA, Jan. 10.—Roy D. Gwynne, for several years past purchasing agent for the Gypsy Oil Co.-Gulf Pipe Line Co. organization, has resigned on account of ill health, effective Jan. 1. Mr. Gwynne has been on leave of absence for about a year, following a nervous breakdown suffered by him following an operation for appendicitis, and has never fully recovered. He plans to take a long rest, and will spend the next few months on a farm near Noel, Mo., in the Ozark mountains.

Mr. Gwynne, who has had many years experience in practically every department of oil company activity, has been actively identified with purchasing activities, having been one of the founders of the Tulsa Purchasing Agents association six years ago. He has also been active in the furtherance of standardization projects, and at the time when his health failed, was serving as chairman of the committee on standardization of belting of the American Petroleum Institute.

He has a host of friends throughout the oil industry who hope that he will be able speedily to recover his former health and good spirits.

V. C. Fuller, for five years assistant purchasing agent for the Gypsy-Gulf companies here, has been appointed purchasing agent, succeeding Mr. Gwynne. Mr. Fuller is a prominent member of the Tulsa Purchasing Agents association, and was president of that organization last year.

G. H. Fagaines has been advanced to assistant purchaser, succeeding Mr. Fuller, and will have charge of all the company's warehouses. Other changes in the office force will ensue, but have not been announced.

Prairie's Shipments Again Increase

Staff Special

TULSA, Jan. 9.—For the third successive month, the statement of Prairie Pipe Line Co. shipments shows an increase, the company having shipped 7679 barrels more daily in December than in November. In December, shipments totaled 3,857,754 barrels, as compared with 3,502,938 barrels in November, an increase of 354,816 barrels. Daily average shipments during December were 124,444 barrels, as against 116,765 barrels daily in November.

Shipments of the Prairie Pipe Line Co. during 1924 were as follows:

Month	Shipments	Daily Average
January	3,942,645	127,182
February	3,475,176	119,830
March	3,688,715	118,997
April	3,747,013	124,900
May	3,658,266	118,009
June	3,547,891	118,263
July	3,617,585	116,696
August	3,353,251	108,169
September	3,024,324	100,811
October	3,329,588	104,503
November	3,502,938	116,765
December	3,857,754	124,444

Production Executive Dies In El Dorado

SHREVEPORT, LA., Jan. 10.—The oil fraternity of Louisiana and Arkansas was saddened by the death of J. H. Jones, production foreman for the Louisiana Oil Refining Corp. in the Louann District, of Arkansas. His death resulted from an attack of typhoid fever. His illness proving serious, he was removed to the Warner-Brown Hospital at El Dorado, where he died at 4:30 a. m. January 7.

The deceased is survived by a wife and two minor children, by a brother, E. M. Jones, production foreman for the same company in the Haynesville Field, by another brother, Malcolm Jones, now employed in the oil fields of California and by a sister who resides in Chicago. He was 37 years of age, a thirty-second degree Mason, a Shriner, and a member of Homer Lodge No. 48, I. O. O. F.

Funeral services, conducted under the auspices of fraternal bodies of which he was a member, were held at Arcadia, La. during the forenoon of Jan. 9. Interment was at Hurricane Cemetery, between Arcadia and Athens.

By this untimely death, there has been removed from the ranks of the real oil men of this territory one of the ablest and most honored of their number; a man known far and wide, wherever the creak of the walking beam is heard, for his genial and charitable disposition.

Total Petroleum Exports For November And 11 Months In 1924

	Exports in Nov. 1924	Change over Oct. 1924	Change over Nov. 1923	11 months ended Nov. 1924	Change over 11 mos. ended Nov. 1923
Crude (bbls.)	1,436,241	+ 39,352	+ 72,115	16,663,243	+ 1,671,392
% Change		+ 2.8	+ 5.2		+ 1.1
Refined Products (gals.)	312,212,520	—29,872,244	+63,495,744	3,598,951,746	+645,379,556
% Change		— 8.7	+ 25.5		+ 27.8
Gasoline (gals.)	96,424,502	+ 5,270,982	+42,568,784	1,088,517,704	+314,625,689
% Change		+ 5.78	+ 79.0		+ 40.6
Kerosene (gals.)	66,600,247	—23,075,794	— 7,390,884	826,880,729	+ 49,776,231
% Change		— 25.7	— 9.9		+ 6.4
Gas and Fuel Oils (gals.)	118,699,830	—11,555,281	+19,858,931	1,332,369,152	+245,175,041
% Change		— 8.8	+ 20.0		+ 22.5
Lubricating Oil (gals.)	30,488,141	— 542,151	+ 8,458,913	351,184,161	+ 35,802,395
% Change		— 1.74	+ 38.3		+ 11.3
Paraffin (lbs.)	28,654,033	— 2,160,290	— 9,040	351,216,646	+ 51,703,977
% Change		— 6.9	Negligible		+ 17.2

Value of crude exported in November totaled $2,104,238, or an average value of $1.165 per barrel, covering all methods of shipment. Average value in October was $1.31 per barrel and in November, 1923, was $1.15 per barrel.

Value of total refined products exported in November amounted to $29,206,049, or an average value of 9.3 cents per gallon, as compared with 9.5 cents in October, and 8.5 cents in November, 1923.

Value of gasoline exports in November was $12,054,819, or an average of 12.5 cents per gallon, as compared with 12.8 cents in October, and 13 cents in November a year ago.

Value of kerosene exports totaled $6,750,315, or an average of 10.1 cents per gallon, compared with 9.7 cents in October, and 8.2 cents in November, 1923.

Value of gas and fuel oils exported in November was $4,304,746, or an average of 3.6 cents per gallon in November, 3.5 cents in October and 2.6 cents in November, 1923.

Value of lubricating oil exports was $6,096,169, or an average of 19.4 cents per gallon, compared with 24.2 cents in October, and 25.1 cents in November a year ago.

Value of paraffin wax exports amounted to $1,529,174, or an average of 5.3 cents per pound, compared with 5.2 cents in October and 3.3 cents in November, 1923.

Important Colorado Wildcat Abandoned; Second Producer At Craig

DENVER, Jan. 10

By Special Correspondent

THE Midwest Refining Co. is abandoning its wildcat on 16-4-69, Berthoud dome, Larimer county, 20 miles south of the Wellington-Fort Collins operation. This test shows the uncertainties accompanying the search for new pools in this district. It was spudded in on June 4, 1924, and was considered from the start as one of the most important wildcats being drilled on the series of north and south structures along the mountain front. A show of gas was encountered at 1870 feet and at 2955 feet it entered the Frontier formation which made 4,500,000 cubic feet of gas. Below this horizon it again showed gas and about 10 barrels of oil and it was generally believed that a new pool would be opened in the Dakota.

This appeared to be so near a certainty that a government report classed the Berthoud dome as a proven structure but at 3828 to 3885 feet the test found the Muddy sand barren. The Dakota sand was picked up at 3925 feet and was found to contain warm sulphur water. There was a showing of oil below the water, however, and hopes were again revived but this week it drilled into the Lakota which contained cold water and a showing of oil. The sand was topped at 4020 feet and drilling stopped at 4031 feet.

The Berthoud test makes the fourth abandoned on as many separate structures on the east front of the range since the Wellington discovery well came in on November 11, 1923. The others were the Haystack dome test by the Ohio Oil Co. between Berthoud and the old Boulder field; the Columbia Heights test by the Union Oil Co. of California, southwest of Pueblo; and the Pueblo structure which was tested by the Ohio Oil Co.

Interest in Old Field

The old Florence field in Fremont county, the second producing field in the country and which is still making 250 barrels a day after producing steadily for 60 years, again came in for some attention this week. There are now 4 or 5 wells drilling around the edges of this district. One of these being drilled by the Mutual Oil Co. under contract for L. L. Travis and associates, on 28-20-69, four miles south of production, encountered a flow of 500,000 cubic feet of gas at 1320 feet. That quantity of gas under ordinary circumstances is not particularly important but in this instance it is attracting considerable attention. This is due to the fact that the Florence field is in a syncline and production in the past has come from the Pierre shale at varying depths from fissures and under conditions that are unusual. The Dakota sand carries water and the wells are all pumpers without gas pressure to lift the oil. One well, however, has pumped more than 1,250,000 barrels of oil in its lifetime. The source of the oil has never been discovered. The presence of the gas in the Travis well may indicate that the pool lies in that direction.

The Mutual Oil Co. is also searching for the pool on its own account and this week spudded in a test on 1-19-69, on the Brush Hollow dome 6 miles northeast of the producing area. A well-defined structure has been worked out at that location and the company will make a test through the Dakota sands and the Morrison to the top of the red beds. The Dakota is expected at around 1200 feet and the total depth will not exceed 2500 feet. The red beds rest on the granite in that district so no attempt will be made to find anything in that horizon.

East Colorado Test

The General Oil Co., a local organization, has spudded in for a test on 20-2N-46, on the Eckley dome, Yuma county, just west of the Nebraska boundary, and west of the town of Yuma. The first sand is expected at 1400 to 1600 feet. This test is on one of a series of structures in Yuma county which are being tested. The Mutual Oil Co. has a well drilling at 900 feet on the Arickaree dome, on 28-2S-43, in the vicinity of the several gas wells drilled on that structure in the past two or three years. The Hessick Drilling & Producing Co. is cementing at 1430 feet on the Trapshooter dome, on 11-1-44, and expects the first sand within the next 150 feet. Two or three other tests on other domes are under way in that district.

The Yuma district is the subject of a rather spirited controversy between two schools of geologists. One of these insists that the objective sands are in the Dakota formation and the other is equally vehement in saying that these sands are in the Pennsylvanian though both place them at approximately the same depth.

The Wellington-Fort Collins district in northern Colorado is resuming its activity after operations slowed down for the holidays. It is reported that the Union Oil Co. of California will start two wells on the Wellington and 4 on the Fort Collins domes within the next few weeks. It has 9 operations under way at the present time exclusive of the Whitaker, the discovery well on the Fort Collins dome, which is producing 700 barrels a day from between casings, and the two big gassers on the Wellington dome. The discovery well on the Wellington dome which came in with a flow of 82,000,000 cubic feet of gas on November 11, 1923, has filled 3000 barrels of tankage with seepage oil coming out of the pipe which takes off gas for drilling purposes and two 500-barrel tanks are being erected to handle the additional oil which is coming out at the rate of about 50 barrels a day.

The only well in the district near the completion stage is that of the Union Oil Co. of Colorado, a local concern, which drilled to 4420 feet on 8-9-68 when it ran into financial difficulties. It sold an option on its gas for enough money to resume drilling at that depth but the casing it purchased was defective and it was necessary to shoot off 150 feet at the bottom. It was drilled past this casing when it again was reported to have run out of money. W. N. Rockwell, a stock broker who helped float the project as underwriter for its penny stock, is no longer identified with the organization and the stockholders are appointing a committee to raise additional funds with which to finish the test. A separate company will be formed to take over an interest in the well. It is hoped that the well can be completed as it is on the edge of the field and just outside the closing contour as originally mapped and is an important test.

Oil in Tow Creek Well

The most encouraging development in the northwestern Colorado area is the showing being made in The Texas Co. test on 7-6-86, Tow Creek dome, Routt County, in its Adair No. 1 which began making oil in quantities from the shale at 2360 feet on Christmas day after having had several good showings and an aggregate flow of 12,000,000 cubic feet of gas from 4 different horizons. The oil blew over the top and then subsided and is now standing 2000 feet in the hole. There were fears of it commencing to flow and it was capped until tankage could be moved in for a test. The tankage is now being erected and the test will be made in the next few days. The hole is still several hundred feet off the Frontier and more than 1000 feet off the Dakota, the objective horizon. It looks very much as if the well will open a new pool in that district. Northwestern Colorado had a set-back as a result of several failures the past fall but none of the operators have pulled out and several tests now drilling are offering more encouragement and the news from that district may be of a different nature as soon as some of these wells reach the objectives.

The Midwest Refining Co. French No. 1, on 22-4-92, Iles dome, Moffat county, entered the Lakota sand at 2726 feet this week and with the hole one foot in the sand, it is bailing liquid of which 2 feet is live oil of high gravity

and excellent quality. The find is not conclusive but is encouraging since this well has already passed through 4 horizons producing some oil along with water. It is classed as a commerical well though it has had live oil, dead oil, water, and unusual geological conditions. The same company has two other wells on the structure approaching the completion stage. One of these is 90 feet higher than the French well and looks very favorable.

Second Producer at Moffat

The Meyer No. 1 well of the Texas Co. and the Transcontinental Oil Co. on 9-4-91, Moffat dome, northwestern Colorado, is being drilled in as this is written. The location is approximately 2000 feet to the south of the discovery well which was completed in March, 1924, with an initial production of 4584 barrels with the hole 16 feet in the sand. It is the second producer on the dome, the tests to the north of the discovery having been abandoned. The Dakota sand was topped at 4036 feet and with the hole one foot in the sand, the oil rose 2800 feet in the 6¼-inch casing in 3 hours, indicating a capacity of 850 barrels. At a depth of 5 feet in the sand, the hole was full to the top but not flowing as the formation is hard and tight and limey. There is no water with the oil. It will be drilled 8 to 10 feet deeper when it will be completed. The drillers are feeling their way carefully as it is the intentions to stop before there is any danger of water intrusion from the bottom as took place in the discovery well. The well has been connected with the pipe line of Prairie Oil & Gas Co.

Present plans are to put the well on a 30 to 60 day test before it is decided upon an additional drilling program. the well proves up about 250 acres on the top of the dome and as it is located on the same structural contour as the discovery, the limits of the pool are not yet defined on any side except some distance to the north where the Weyand well ran into water.

The discovery well is now making around 900 barrels of pipe line oil a day. There is considerable water with the oil but the two are easy to separate as the water is cool and fresh and the operation involves but little expense.

Two Associated Oil Men Are Promoted

LOS ANGELES, Jan 12.—At a recent meeting of the board of directors of the Associated Oil Co., F. B. Henderson was made fourth vice president and L. J. King fifth vice president. Mr. Henderson will be in charge of sales, transportation, claims and taxes while Mr. King will be in charge of drilling operations.

It is specifically set out that Mr. King will be director of field operations beginning at Santa Barbara county and reaching to the south end of the state, but it is understood that his department will cover the company's entire drilling program.

He has virtually been in charge of this work for the last eight years. He joined the Associated interests about 15 years ago when he was a field superintendent in the San Joaquin valley field and he is regarded as one of the most competent field operators in the state.

"Clint" Moore Dies At Home In Tulsa

TULSA, Jan. 10.—Clinton Moore, aged 76, pioneer oil producer died at his home here on the afternoon of Jan. 7. Death came as the result of erysipelas poisoning which developed shortly before Christmas.

Funeral services for Mr. Moore were held from the home Jan. 9, being conducted by Rev. P. Crum pastor of the Trinity Episcopal church here. Active pallbearers were Arch L. Smith, Ted Smith, Wells Montgomery, E. R. Perry, H. N. Greis and E. B. Reeser. Honorary pallbearers were; J. L. Markham, Jr., J. A. Veasey, H. P. Anderson, J. J. McGraw, J. L. Larkin, J. H. Evans, R. D. Rood, H. V. Foster, M. Moran, S. B. Longfellow, H. L. Standeven, N. V. V. Franchot, P. D. C. Hall, A. R. Simons, L. J. Martin, J. J. Shea, George Coyle, W. S. Mowris, Harry W. Black.

The passing of "Pop" or "Clint" Moore as he was familiarly known by his associates, takes a loved and respected pioneer in the petroleum industry. He has been an outstanding figure in the affairs of Bartlesville and Tulsa for the past 20 years.

Mr. Moore was born on a farm near Rochester on Feb. 28, 1848. He served as drummer boy with the 22nd New York Volunteer Calvalry during the Civil War being wounded in 1864. In 1866 he was attracted to the oil fields of Pennsylvania. For 22 years he was with the Standard Oil Co. in Pennsylvania and West Virginia on pipe line work.

In 1904 Mr. Moore joined the ranks of wildcatters in Oklahoma and came to Bartlesville where he lived until 1916. At that time he moved to Tulsa.

On May 1, 1875, Mr. Moore married Miss Sarah Keenan of Meadville, Pa. Six children were born of which five are now living. They are Frank L. Moore and Harold C. Moore and Mrs. Pearl Kiskaddon of Tulsa, and Mrs. Edith Fowler and Mrs. Hazel Burch of Bartlesville. Mrs. Moore died in 1889. In 1915 he married Miss Cora B. Leech who is still living. George N. Moore, president of the Moore Refining Co. at Arkansas City, is a cousin of the deceased.

Mr. Moore was a director of the Exchange National Bank here and active in the affairs of the G. A. R. and the Masonic bodies including the Shrine.

TULSA, Jan. 8.—A. C. Veatch, chief geologist, Sinclair Consolidated Oil Corp., is in Venezuela.

Half Million Barrels To Atlantic Coast

By Special Correspondent

LOS ANGELES, Jan. 8.—Exports of petroleum from this harbor last week totaled 1,648,822 barrels, of which amount 755,611 barrels went to the Pacific coast domestic trade.

Loads for Atlantic coast domestic trade totaled 540,049 barrels, and foreign shipments amounted to 253,162 barrels. During the week 22 tankers took loads of petroleum products from the harbor. The shipments follow:

Dec. 27

None.

Dec. 28

Los Alamos to Portland, 36,428 barrels gas for Shell Co.
Cathwood to Martinez, 27,528 barrels crude for Shell Co.
Tejon to Seattle, 70,334 barrels fuel for General Petroleum Corp.
Utacarbon to Martinez, 77,121 barrels crude for Shell Co.
Calgarolite to Pisagua, 84,000 barrels fuel for Shell Co.
R. E. Hopkins to Bayonne, 71,000 barrels crude for Standard Oil Co.

Dec. 29.

J. A. Moffett to Richmond, 64,031 barrels crude for Standard Oil Co.
Frank H. Buck to Avon, 62,000 barrels crude for Associated Oil Co.
Agwipond to Bayonne, 91,000 barrels crude for Standard Oil Co.

Dec. 30

La Purisima to San Diego, 27,259 barrels fuel, 14,735 barrels gas, 2,450 barrels kerosene, 2,431 barrels distillate for Union Oil Co.
Tuxpanoil to Bayonne, 74,005 barrels crude for Standard Oil Co.
K. R. Kingsbury to Bayonne, 75,993 barrels crude for Standard Oil Co.

Dec. 31

Richmond to Richmond, 64,111 barrels crude for Standard Oil Co.
H. T. Harper to Willbridge, 39,044 barrels gasoline for Standard Oil Co.
Coalinga to Antofogasta, 77,162 barrels fuel for Shell Co.

Jan. 1

Lebec to Seattle, 72,498 barrels fuel for General Petroleum Corp.
Algonquin to Bayonne, 69,442 barrels crude for Standard Oil Co.
W. M. Irish to Philadelphia, 80,009 barrels gas for Atlantic Refining Co.
David McKelvey to Bayonne, 75,000 barrels crude for Tidewater Oil Co.

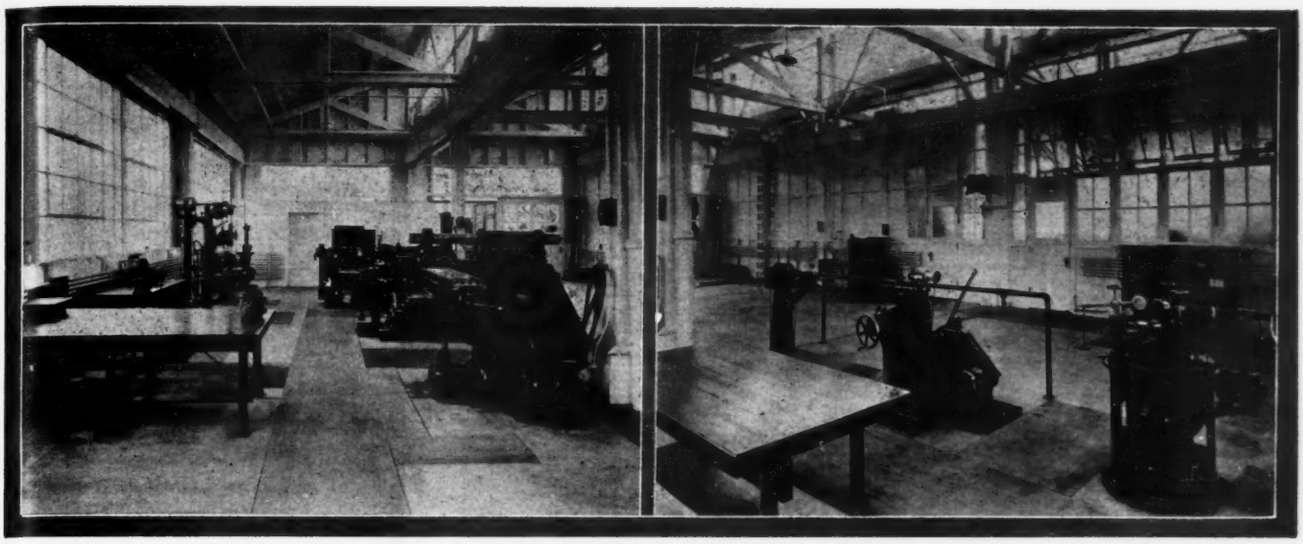
Jan. 2

La Purisima to Portland, 28,997 barrels fuel, 14,936 barrels gas, 2,431 barrels kerosene, 7,147 barrels diesel, 2,445 barrels distillate, for Union Oil Co.
Eburna to Yokohama, 47,000 barrels fuel for Shell Co.
Mina Brea to Ioco, B. C., 45,000 barrels crude for Imperial Oil Co.

Pipe Line to Montague

By Special Correspondent

FORT WORTH, Jan. 10.—Montague county got its first pipe line connections this week, when the Prairie Pipe Line Co. started taking oil in its line which has just been completed, as an extension of the line to the Seay pool, Jefferson county, Okla. The Texas Co.'s 900-foot producer on the Gist was the first connected up, on Friday. There are three other oil wells, all shallow producers, in the North Montague district, and these are to be connected. Operations in this promising wild cat territory will probably be considerably enlivened by this outlet for production. Gassers in the same territory already completed have a capacity of around 100,000,000 feet daily.



Two views showing parts of physical laboratory and machine shop, where oil well drilling equipment is subjected to stresses and loads approximating actual field conditions

Laboratory Equipment Devised To Test Drilling Tools

By Paul Wagner

STAFF REPRESENTATIVE

HOUSTON, Jan. 8

WHEN the late Howard R. Hughes determined to build and equip a modern research laboratory as an adjunct to the Hughes Tool Co. plant at Houston, he took up an idea intended to be of practical value in developing and improving oil well drilling tools.

The result was a $100,000 laboratory for making tests under conditions closely approximating those encountered in actual field practice.

The laboratory, though housed in a building of its own, is a part of the engineering department and is under the direction of the chief engineer. The building contains besides the chief engineer's office the various main groups, or sub-divisions, embraced in the physical laboratory and machine shop, the chemical laboratory, the metallurgical laboratory, the bit testing laboratory and the gage and standards testing laboratory.

Chemical Tests Important

In the chemical laboratory it is possible to make all ordinary kinds of quantitative and qualitative analyses of materials; also to carry on numerous investigations in the search for better steels. This branch of the laboratory is never idle, and its operation safeguards the users of equipment from costly failures in the field.

Alloy steel of highest quality is the principal material of which Hughes products are manufactured.

Castings are produced in the company's own foundry under scientific supervision. The minutest detail that has a bearing on the quality of the finished casting is carefully watched.

The chemical laboratory performs an equally valuable service in determining the suitability of such important supplies as carburizing compounds for case hardening of materials, fuel oils, molding, and core sands for the foundry.

Metallurgical Laboratory

The metallurgical laboratory is closely related to that dealing with chemical analyses. The equipment of the metallurgical laboratory consists of polishing machines for the preparation of specimens and a microscope for examining them.

A photoghaphic dark room is conveniently located where photo-micrographs can be developed to serve as a permanent record for future reference and comparison.

Representative samples of steel, or other metal, are given a mirror polish in order to produce a plane surface as free from scratching as possible. The surface then may be viewed under the microscope in studying non-metallic inclusions present, or the sample may be etched with a suitable reagent which brings out the grain structure of the metal.

Every heat of steel made in the company's own foundry is thoroughly investigated by this method to insure that no undue quantity of non-metallic impurities are present. These are always a source of weakness and often are the direct cause of the failure of material in service.

The machine tool equipment is of late design and is operated by skilled mechanics. It consists of lathes, a milling machine, shaper, three drill presses, a belt grinder, a pedestal type grinder, a Universal grinder and a Universal power-driven hacksaw.

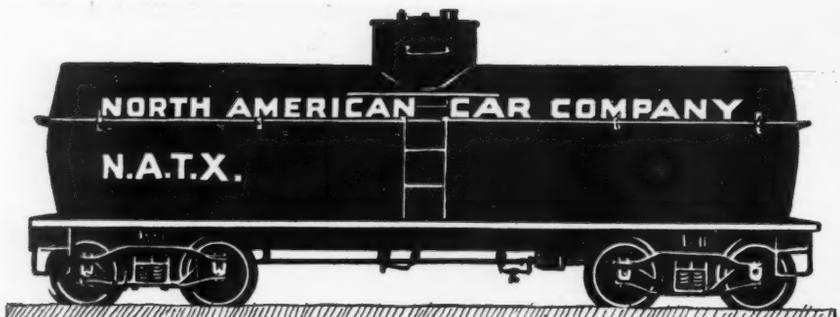
Samples of steel for chemical analysis are prepared in this department, which also machines the test specimens for various physical tests; and makes special experimental apparatus and parts used in various tests. In short, it prepares the necessary material, which the other department, principally the physical testing laboratory, requires for their studies and investigations.

The physical testing laboratory contains equipment of latest design that is so constructed as to duplicate the stresses and loads to which tools are subjected in actual field practice.

Tool joints, drill collars and thrubolts are at times subjected to severe static tensile loads. Drill collars and tool joints also resist compressive strains at times, while side roller pins must withstand transverse loading, especially when the bit is forced in a tight hole.

The Universal testing machine used in the physical laboratory is designed to duplicate the stresses mentioned and it is used to investigate the ability of materials to withstand them.

In rough "digging," the cone pins of drilling bits, as well as reamer pins, are subjected to repeated impact loads. Stresses set up in the field in this way may not be great enough to cause failure by a single application but the com-



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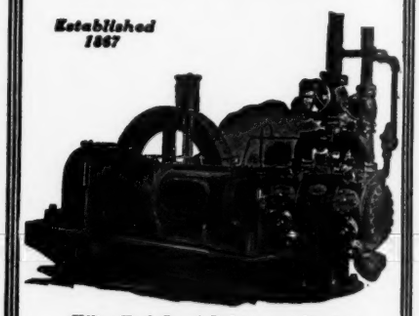

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by R. P. McLaughlin

Petroleum Engineer and Geologist, formerly State Oil and Gas Supervisor of California.

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- Methods of drilling wells;
- How to test wells;
- How to gauge output of wells;
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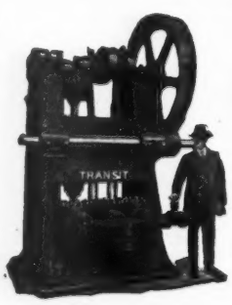
TRANSIT PUMPS



Standard
PIPE LINE, REFINERY, FIELD
Pumps

National Transit Pump & Machine Co.
OIL CITY, PA.
District Offices: New York, Philadelphia, Tulsa, Cleveland, Pittsburgh, Houston and Denver

ulative effect of constant repetition may bring about what is known as fatigue failure of the material if the machinery is not designed with a sufficient factor of safety to take care of such a condition.

The kind of steel used and the character of heat treatment is has undergone has an important bearing on such phases entering into the maintenance of a proper factor of safety. The Matsumura Repeated Impact Testing machine is used to study such conditions.

It sometimes happens that the driller accidentally "drops" his drill stem when coming out of, or going into, the hole. This results in a sudden load being applied to the cone pins when the bit hits bottom. This is known as an impact load.

In order to successfully withstand such stresses, the material must have high resistance to impact or shock loading. This property is investigated by means of an Izod Impact Testing machine. For this test, the specimen is clamped in a stationary vise, and a hammer swinging like a pendulum strikes a blow of known magnitude. This causes fracture as the specimen and the energy required to accomplish this result is recorded on a scale.

General view of metallurgical laboratory, where heat treatment investigations are made and experimental work is carried on

Hydraulic Rotary Test

There is another very interesting machine in the company laboratory for thoroughly testing the finished product, whether bit or milling tool. This is a hydraulic rotary drilling machine.

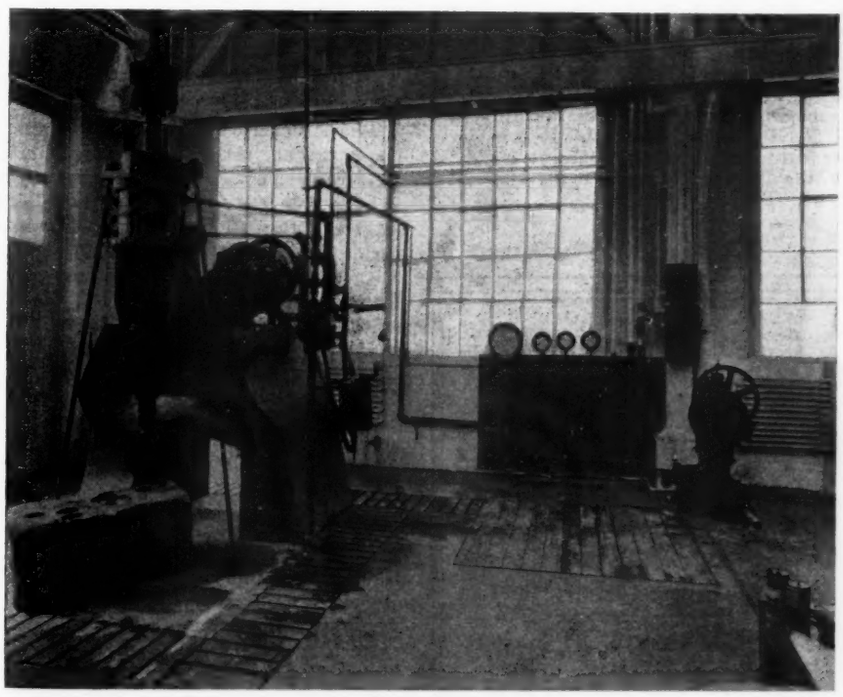
The tool to be tested is fastened to the "drill stem," which is rotated by means of a variable speed motor. The drill stem can be raised and lowered at will; and the pressure on the tool being tested can be regulated as desired. Tests are made under conditions resembling actual field practice.

Rocks resembling the formations encountered at various depths are kept on hand for these tests. They consist of granites, sandstones, limestones and others. The effects that variations in rotational speed and weight have on drilling speed are studied and many very interesting points have been brought to light.

The gage and standards division, although the last to be described, is by no means the least important. When one considers the great importance of accurate fits and certain interchangeability to the man in the field, one does not wonder at the care taken here to maintain a high degree of accuracy and close adherance to established standards.

Highly accurate and very sensitive measuring instruments are part of this department's equipment. Hoke Precision Blocks, accurate to within less than ten one-millionth of an inch, thread standards, micrometers, dial indicators, micrometer microscope and a Hartness Screw Thread Comparator are available for this work.

A complete set of Master Gages is also maintained in this department, so that the standards, once approved, may not be lost in the progress of time. These Master Gages are used to check the Shop Master Gages and determine the acceptability of the latter.



Variations in rotational speed and weight and their relation to formations actually encountered in field practice are studied by means of a hydraulic rotary testing machine

E. O. Garrett, Secretary Of Elliott Jones, Dies

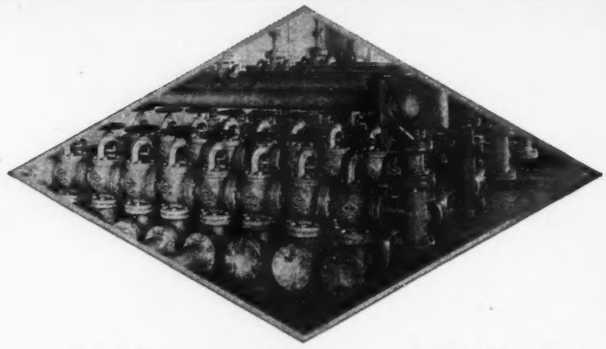
By Special Correspondent

SAN ANTONIO, TEX., Jan. 10.—E. O. Garrett, secretary and treasurer of Elliott Jones & Co., Inc., refiners, died this morning after an illness of several months.

Mr. Garrett came to San Antonio about 10 years ago from Houston where he had been in the furniture business. Shortly after his arrival here he became secretary and treasurer of the Dixie Oil & Refining Co. This concern sold out to the Humble Oil & Refining Co. in 1917.

In 1919, Elliott Jones & Co. was organized and Mr. Garrett became its secretary and treasurer, which position he held until his death. Mr. Garrett was a member of the Masonic order, the San Antonio Rotary club and various other civic bodies. He was 47 years old.

Fig. 106, screwed, Standard Bronze Globe Valve.



Keeping pace with top notch Production

This picture shows a typical oil installation of Jenkins Valves. This battery of Standard Iron Body Cross Valves was taken in a Tulsa refinery.

The oil man who uses Jenkins Valves invests in a valve service he can count on. Each valve of every type has reserve strength to cope with the severities of constant day in, day out use.

Where maximum production is to be maintained, where equipment is selected because it is known to be reliable—there you'll find Jenkins Valves

They are made in bronze and iron for practically every requirement, and when so ordered are specially tested for oil service.

At supply houses everywhere,

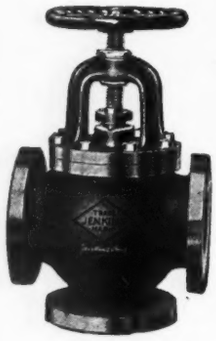


Fig. 146, flanged, Standard Iron Body Cross Valve.

JENKINS BROS.

80 White Street.....New York, N. Y.
524 Atlantic Avenue.....Boston, Mass.
133 No. Seventh Street.....Philadelphia, Pa.
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Always marked with the "Diamond"

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SINCE 1864

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PROCESS PATENTED. The Barnickel processes for treatment of cut oil and other petroleum emulsions by the use of chemical agents are protected by valid process patents issued by the United States and foreign countries.

The purchaser of TRET-O-LITE is licensed to practice the Barnickel processes to the extent permitted by the quantity of TRET-O-LITE purchased. He is not licensed to use any other chemical covered by the Barnickel patents, either alone or with TRET-O-LITE.

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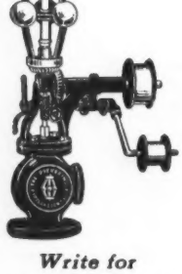

Write for Bulletin No. 5

Pickering Governors

Recognized as Standard Equipment in Oil Field Service.

Stocks carried in Principal Cities including Pacific Coast.

The Pickering Governor Co.
Portland, Conn.

Inquiries Are Brisk For Pipe Goods

By Special Correspondent

PITTSBURGH, Jan. 13.—Sizable inquiries are commencing to appear for line pipe and other forms of tubular products used in the oil fields. These mostly originate in the south, southwest and west, although with advances in Pennsylvania and Ohio oils, the outlook is brighter for more drilling in those two states.

These inquiries from the larger fields, however, are thought to be but the forerunners of extensive business to be placed early in 1925. Sales of oil country goods have been few in number since the first of the year, according to all pipe makers here and in the Mahoning valley district. Producers have fair-sized order books but still are able to grant fairly prompt deliveries.

Exports of casing and oil line pipe in November, according to recent figures of the department of commerce, amount to 4646 tons as compared with 10,888 tons in November, 1923. For the 11 months ended November, 1924, shipment abroad totalled 83,267 tons as against 57,368 tons for the 11 months ended Nov. 30, 1923.

Exports of oil well machinery in November, 1924 were valued at $476,940, while in the same month the previous year they were valued at $661,559. For the 11 months, ended Nov. 30, 1924, the value was $6,049,340, as compared with $6,129,315, in the 11 months ended Nov. 3, 1923.

Activity in the plate market has been most marked in the west. The Pan American Petroleum Corp., Los Angeles, placed four 100,000-barrel tanks with the United States Steel Products Co. This involved 1560 tons of plates. It also placed eight 37,000 barrel tanks with the Western Pipe & Steel Co., 1360 tons of plates.

The Associated Oil Co., San Francisco, awarded three 80,000-barrel tanks to the Western Pipe & Steel Co., involving 900 tons of plates, a similar award going to the Lacey Manufacturing Co. It now is taking bids on two barges involving 250 tons of plates. The American Petroleum Corp., Los Angeles, Cal., placed an order with the Western Pipe & Steel Co., also, for four 55,000-barrel tanks involving 800 tons of plates and the 700 tons needed for oil storage tanks for the General Petroleum Co. Parr terminal, Oakland, Cal., will be fabricated by the General Petroleum Corp.

This latter interest awarded the contract for 200 tons of structural shapes for 10 buildings it is erecting, to the Judson Manufacturing Co., and will this week award 500 tons of reinforcing concrete bars for the same structures. The Union Oil Co., San Francisco, awarded the contract for an oil tanker to the Moore Drydock Co., requiring 350 tons of plates and 50 tons of shapes. Plates

and shapes are quoted at 2.00 to 2.10 cents a pound f. o. b. Pittsburgh.

At Chicago the price is 2.20 cents where 3.10 cents applies on plates out of warehouse stocks. Concrete bars are quoted firmly at 2.10 cents f. o. b. Pittsburgh mills.

The Phillips Petroleum Co., continues to hold its order for 75 tank cars in abeyance.

Renewal of tank buying in the Wortham, Texas, field has not developed as yet but more orders for 55,000-barrel and 80,000-barrel tanks are expected. Tank buying in Chicago too, has slackened, although fabricators placed 2000 tons of tank plates with a Chicago mill just last week.

The Standard Oil Co., of Louisiana, New Orleans, has placed a contract with a southern fabricator for a filter press building, involving about 300 tons of shapes.

The Plaza Oil Co., 606 Odd Fellows building, Indianapolis, plans for construction of a 4-story reinforced concrete and brick automobile service center on Maryland ave., that city. Vonnegut, Bohn & Miller, 610 Indiana Trust building are architects. Norman E. Carter is president of the Plaza Oil Co.

The Quaker Hill Oil & Gas Co., 2519 Peach st., Erie Pa. according to E. L. Jones, president, is in the market for equipment for a 4-mile pipe line, together with air compressors and booster station equipment.

The Oil State Refining Co. Enid, Okla., is arranging to rebuild the portion of its refinery recently destroyed by fire with $50,000 damage. Stills and other equipment are to be replaced.

The Marland Refining Co., Ponca City, Okla. also will rebuild its oil storage and distributing plant on the outskirts of the city which was destroyed by fire the middle of December, with loss of approximately $200,000 to buildings and equipment.

The Humphreys-Boyd Oil Co., Mexia, Tex., is proceeding with the construction of a natural gasoline manufacturing plant on the Wesson property near the city estimated to cost $150,000 with equipment.

The gasoline refinery to be constructed by the Humble Oil & Refining Co., Houston, Tex., in the Wortham oil field near Mexia, Tex., will cost $75,000.

The Ventura Refining Co., has subleased from the Pacific Steel & Wire Co. three acres on the Inner Harbor at Nineteenth ave. and Dennison st., Oakland, Cal. It will erect a modern petroleum products distributing terminal which will cost about $250,000. It is to be in operation by early March of this year.

The terminal will be the general and distributing headquarters of the Ventura Refining Co. for all business north of Tehachapi. The improvements to be made at once include the installation of three 30,000-gallon tanks for gasoline, one 10,000-barrel tank for gasoline, seven lubricating oil tanks; one concrete warehouse and a casing plant of 15,000-

ENGINEERS & CONTRACTORS IN NATURAL GAS AND OIL

Our Sixteenth Job for This Client

This contract included a city distribution system, as well as main pipe line from field to town including well connections, field regulators, well and line drips, etc. Accepting it, the client writes:—

"Your superintendent has satisfactorily completed the contract for the installation of the gas distribution plant in the city of..... We have this day accepted the plant as completely satisfactory and are now operating it with our own employees. We thank you for the good work your superintendent has done, and the cooperation you have given in this work."

Previous contracts for this client included not only pipe lines, but several gasoline plants and pumping stations, as well.

HOPE SERVICE

Engineering counsel, design, construction and contracting—in pipe lines for oil and gas, oil pumping stations, gas compressing and boosting plants, gasoline recovery systems, city and inter-city gas mains.

UNIT RESPONSIBILITY

ENGINEERS CONTRACTORS HOPE Engineering & Supply COMPANY DESIGNERS MANUFACTURERS

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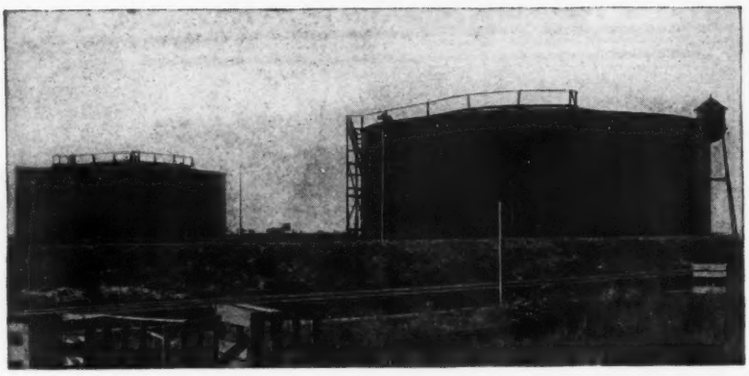


Bryanmound, Texas Five ring, 55,000 barrel tanks

Reduce your Evaporation Losses

Tight roofs greatly reduce evaporation losses, often as much as 70%. It pays you to have carefully designed, well built storage tanks to keep evaporation at a minimum.

Pittsburgh-Des Moines steel tanks, with specially caulked steel roofs are practically vapor-tight. At present prices this saving of oil will pay for the cost of the roof within one year.

We design, fabricate and erect all kinds of storage tanks, stills and agitators. Invest in economical, serviceable equipment for your business—for details write to the nearest Pittsburgh-Des Moines office.

Ask for our new Oil Tank Catalog No. 76.

You need a copy for reference.

Pittsburgh-Des Moines Steel Co.

876 Curry Bldg., Pittsburgh, Pa.

376 Rialto Bldg., San Francisco, Cal.

PITTSBURGH TANKS DES MOINES TRADE MARK

976 Tuttle St., Des Moines, Iowa

1276 Praetorian Bldg., Dallas, Tex.

PITTSBURGH DES MOINES

P. & C. Fig. 147

This valve is particularly suited to handling crude oil that carries sand and cuts the seats. A 350 pound test valve with the retaining ring construction that makes it so easy to renew seat rings.

Reading Steel Casting Company, Incorporated. Pratt & Cady Division, Bridgeport, Conn.

Stocked by: Norvell-Wilder Hardware Company, Beaumont, Houston, Mildred and Shreveport. Grinnell Co. of the Pacific, Los Angeles, Cal.

PRATT & CADY VALVES

square feet of floor space for barreled and cased goods.

Properly to provide for its increase in business in oil well tools and supplies, the Hughes Tool Co., Houston, Tex., has amended its charter increasing the capital stock from $300,000 to $2,000,000.

Following the increasing of its capital stock came the announcement of a $1,700.000 stock dividend effective immediately. Howard R. Hughes who inherited the company about a year ago, owns the majority of the stock.

The plant of the company was practically doubled in 1923 and material increases were made in 1924. The development program for 1925 includes the operation of a branch plant at Oklahoma City, Okla., now under construction, besides increases in its other activities.

It has awarded the general contract to the Charles M. Dunning Construction Co., 420½ North Hudson st., Oklahoma City, for a 1-story machine shop, 60 x 100 feet at Twenty-first and Santa Fe streets, Oklahoma City, to cost $20,000.

Francis Miller, formerly of Franklin, Pa., has just been appointed general manager of the Marlin Oil Co., Texas City, Tex. He is one of the youngest men to hold such an important position in the southwestern oil territory. He is in direct charge of the export shipments of oils for the Marlin company.

Rig Iron Freight Rates Cut 15 Per Cent

WASHINGTON, Jan. 12.—A 15 per cent reduction in rig-iron freight rates, to be made not later than March 10, has been ordered by the interstate commerce commission on complaint by the Parkersburg Rig & Reel Co. against practically all the railroads in the United States, west of the Hudson river.

The new rates are to be on the basis of 85 per cent of the rates on oil well outfits and oil well supplies. The rig-iron outfits are now classified with oil-well outfits and take the same rates.

The complaining company did not object to the rates on oil-well outfits and supplies but said they were too high in instances when a straight car load of rig-iron outfits, that is one in which no other kind of oil well supplies were included, was shipped.

The report of the commission included in rig-iron outfits, two steel shafts, two steel bands, two pieces of pipe, one box of bolts, five kegs of nails and certain wooden parts, such as bull and calf wheel cants, arms and pins in the rough, 80 per cent of the weight being contributed by the iron and steel articles and 20 per cent by the wooden. It said, amusingly to men in the oil fields, that the rig irons did not include the "essential parts" of a well drilling outfit such as the engine, boiler, derrick, drilling tools, cable or crown block, "without which it would be impossible to drill a well with rig-irons."

New Low Prices

Soaring Production Brings Lower Costs—Marvel Quality Upheld

Effective at once all Marvel Pump prices are reduced to a level which makes this quality line the greatest dispensing equipment value ever offered to the oil industry.

1924 saw the demand for Marvel Pumps increase by leaps and bounds. Total sales for the year were nearly $1,000,000 greater than in 1923. The ever-growing preference for Marvel Pumps forecasts an even larger sales volume in 1925.

In meeting this situation we have instituted a complete reorganization of factory methods and added new, improved equipment. Our plant capacity has now been greatly enlarged. Material purchases are now on a vastly greater scale than ever before—and at more favorable prices.

The new Marvel prices are based on an anticipated increase in 1925 sales. They simply pass along to the oil trade the savings effected by the real "quantity-production" schedule their generous patronage has made possible.

And Marvel service to the oil industry—that which has won for Marvel its position of leadership—will be continued as in past years. The recognized quality and mechanical superiority of Marvel Pumps will be maintained. Marvel engineers will be constantly on the alert to develop new or improved Marvel units to meet new needs as they arise.

THE MARVEL EQUIPMENT CO., *Cleveland, Ohio*
The Marvel Equipment Co., Ltd., 12 King St., East, Toronto, Ont., Canada

PUMPS

Dispensing Equipment

on your 1925 Pump Requirements

IN THE MAILBAG

Raise U. S. Motor End Point, Says Midgley

THOMAS Midgley Jr., vice president and general manager of the Ethyl Gasoline Corp., has written a letter to N. P. N. supporting the stand taken by the paper in the Dec. 31 issue, in urging upon the Federal Specifications Board that it raise the end point for U. S. Motor gasoline from 437 F. to 441 F.

The change is advocated because the 437 F. end point has become a purely artificial one since the official method of making distillation tests on gasoline has been changed, and it is working a hardship on refiners who sell most of their output at wholesale to the trade by reducing the yield of U. S. Motor gasoline they get from their crude.

Mr. Midgley, the developer of tetraethyl lead, is an active member of Committee D-2 of the American Society for Testing Materials, which works out oil testing methods in conjunction with the advisory committee of the American Petroleum Institute. Mr. Midgley, who is connected with General Motors, may be considered as a representative of the automobile industry on Committee D-2. Support of the proposal to raise the endpoint, coming from him, therefore, may be considered as support from a very important part of the automotive industry.

Here is Mr. Midgley's letter:

"Your issue of Dec. 31 includes an article by Paul Truesdell entitled 'Refiners Ask Four-Degree End Point Raise of U. S. Motor Gasoline.'

"This article is an excellent presentation of a very pertinent subject.

"As a member of Committee D-2 of the A. S. T. M. I took an active part in the discussion which led to the changed method of testing gasoline. This was thoroughly understood by the committee at the time and was fully recognized as an evil which would result from the changed method of testing, but for myself, I feel sure that the evils which would have inevitably resulted from the continued use of cotton on the bulb of the thermometer would have offset many times the temporary evils experienced during the transition period.

"As an automotive engineer I do not hesitate in endorsing the gasoline meeting the government specification of 437 end point WITH THE COTTON ON THE BULB, and I therefore, wish to heartily endorse the stand taken by your paper in this article and feel that the U. S. New Navy specification should be changed at the earliest possible moment to read 441 F. instead of 437 F. end point."

In other words, let the automobile engine be the judge of gasoline quality.

BY GOLLY, IT'S GETTING SO THAT EVERY CROSS-ROAD IN THE COUNTRY HAS ONE OF THESE TOLL GATES
STATE GOVTS.
THE MOTORING PUBLIC
GASOLINE TAX
THE HIGHWAYS OF THE NATION
SEDGWICK

THE INVISIBLE TOLL GATE

Why Not A Warning Against Monoxide?

A SAMPLE has come to this office of a concoction which the label claims reduces the carbon monoxide in exhaust gases to the point of harmlessness. We don't know what is in the stuff but we do know that this is the season when, without any encouragement, a certain number of motorists kill themselves by working in their garages with the doors closed and the engine running.

Before any motorist shuts himself in with his engine running, he ought to have better than the unsupported word of somebody that a compound he has put into his gasoline will render the exhaust gases safe, unless he is tired of life.

We believe any chemist will tell you that the only way to reduce carbon monoxide in the exhaust gases is to bring about more complete combustion in the cylinders and where is the dope (outside of flamboyant advertisements) that will actually do this?

Why wouldn't it be a good thing for the jobbers to post up in a conspicuous place on their service stations, a card, easily read, warning their patrons against working in a closed space with an engine running, and also warning them against relying on anybody's word, unless he gives absolute proof of his claims, that his dope will eliminate carbon monoxide?

We believe such warning signs would be the means of saving lives and it wouldn't cost much of anything. The motorist ought to be warned to be more careful about exposing himself to carbon monoxide poisoning rather than encouraged to believe that some nostrum will eliminate it.

THE EDITORS' VIEWPOINT

Educate Ourselves First

WE, IN this great industry, talk a lot about educating the public but are we educated on our own industry? Undoubtedly the industry is much better informed than some years ago. The development of current statistics, set up in intelligible form, by the American Petroleum Institute has done much to bring home to every one that the industry is a unit and not three or four separate industries.

National Petroleum News in its broad news presentation of the happenings of the industry, we believe, has helped some too. This paper purposely writes every story so that every oil man can read at least some of it and get some immediate application from it to his own business.

It is just as necessary for the marketer to know that a new oil pool has come in, or that a deep sand has been discovered or that some new method promises a big increase in current production, as it is for the producer to know that the marketer is having his troubles with a couple of state governments or is finding an increase in furnace oil business, or a lowering of price on gasoline due to competition. The refiner, being in between, generally has a better idea of both ends of the industry, but even his knowledge is not always what it should be. He is too prone to stay at his desk and not travel among either the producers or the marketers.

This is not an editorial on National Petroleum News, but it's to the point to remark that this paper's editorial policy has been to so present the news of the whole oil industry that it will be understood, at least in measure, by every man in it in order that he may be a better oil man.

Ask yourself now if you can give even your own employes, let alone an outsider to the industry, an intelligent explanation for its present difficulties. You can if you have paid some attention to what has been going on in the industry as a whole; you can if you have kept up with the development of all the surplus production in the Mid-Continent, in California and now back again at Wortham, Texas; if you have informed yourself about the big increase in the use of "cracking" processes whereby the production of gasoline has about doubled from the same quantity of crude. You can if you have appreciated that gasoline today is made from so-called low grade crudes; you can if you understand something about the big increase in refining capacity, as well as the improvement in refining efficiency; you can if you understand the vast increase in the number of oil marketers needed to handle this steadily increasing gasoline consumption, and their having operated to a large extent on marginal contracts which left a small percentage of gasoline on the open refinery market that was bought by newcomers at buyer's prices and permitted the newcomers to compete at a less merchandise cost with the older marketers.

In short you can tell your employes and your friends why the oil industry has had its downs the past three years if you have been studying the whole oil industry.

But you can't if you have just been watching a certain hole in section, township and range naughty naught or a battery of stills, or a couple of bulk and filling stations.

This is the season of the year when most oil companies have groups of their men in to talk over the new year's plans. Burn a little midnight oil yourself and give those men a somewhat intelligent idea of what the whole oil business is like. They will then be good salesmen for the whole industry and in the course of the next few months at least a few million people in these United States will receive from them a little better idea of the oil business, will understand that it's not all peaches and cream, that it's not operated by a monopoly, that every other oil man is not a crook, that they are not being "robbed" in the price of gasoline.

The place to begin the industry's proposed educational campaign is right at home, starting with YOU who are reading this editorial. The next place is with your own stockholders and employes. And then will come the public.—W. C. P.

Puts Starting Up To Engineers

WE IN the oil industry may well feel a grateful glow after reading an article by P. M. Heldt in a recent issue of Automotive Industries because Mr. Heldt takes a position quite different from that of some automotive engineers as regards ease of starting and crankcase oil dilution.

Mr. Heldt discusses the difficulties of starting the automobile engine in extremely cold weather, the use of the choke, causing greatly excessive amounts of gasoline to be injected into the cylinder and then points out that it is one of the problems of the automotive industry to figure out practicable ways of preheating the intake manifold or otherwise furnishing sufficient heat to vaporize enough of the gasoline drawn into the cylinders so that the charge will fire.

He dwells on this problem from the standpoint of the automotive engineer's perfecting devices for starting cars easily with the kind of gasoline now available, rather than recommending a high test gasoline be put at the command of the motorists so that there will be no difficulty in starting the engines as they are now.

Mr. Heldt has written an exceedingly interesting article on just what happens when a cold engine is cranked. He says in order to get a sufficient amount of light ends to vaporize at low temperatures it is necessary to shoot into the cylinders about 20 times the normal charge of gasoline, that most of this goes through the engine unburned, washing the lubricating oil off the walls of the cylinders and dripping past the pistons to thin out the oil in the crank case.

He also discusses some of the devices that have been invented for preheating, none of which so far, the inference is, can be regarded as 100 per cent.

He concludes the article by stating:

"Further progress in cold weather starting aids will no doubt depend somewhat on development in fuels. If fuel should become still less volatile the need for such devices will increase and this will promote their development."—P. T.

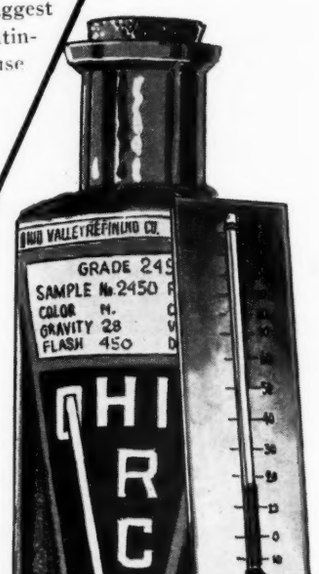
A Pure Pennsylvania Oil—*with a low cold test*

Sterling Motor Oil makes it possible for you to recommend and sell high grade oil for winter use. It has been the custom to drain crank cases and switch to lower grade oils upon the approach of winter weather. But in Sterling Oils you have a 100% pure Pennsylvania product with a cold test as low as 15 degrees. It will lubricate thoroughly in severe weather and you can therefore safely suggest its continued use

There is a direct benefit here for dealer and user alike. It enables the dealer to sell the highest grade oil the year round. And it gives the motorist the service of the best lubricating oil in the world when efficient lubrication is most important—during the cold months when the going is hardest.

If you blend, look over the specifications and select the ones best suited to your use. Sterling Oils ready blended are offered in light, medium, heavy, extra heavy, XX heavy, motorcycle and tractor.

Send for samples



SPECIFICATIONS

No.	*Gravity*	*Flash*	*Fire*	*Visc.*	*Cold*	*Color*
2450	28	450	520	80/85	15/20	N
2430	28/29	430	500	70/75	15/20	7
2400	29/30	410	480	60	15/20	6
255	26/27	545	625	135/140	20/25	N
153	31	425	480	46/47	20/25	3

Ohio Valley Refining Company
St. Marys, West Virginia

Ohio Valley MOTOR OILS

Sullivan A Prominent Builder Of Industry

EARLY in November, after the duly constituted authorities of the various election precincts of Wyoming had finished their tallying, they made it known that Mrs. Nellie Ross had been chosen as governor. Whereupon Eugene J. Sullivan, of Casper, composed a telegram to Mrs. Ross of such affability, to say nothing of gracious urbanity, that political congratulators will in the future have to bail dry their fonts of courtly phraseology to half equal the high standard set by Mr. Sullivan. His interest in the matter of the election, by the way, was merely the fact that he had been the Republican nominee for the place attained by Mrs. Ross.

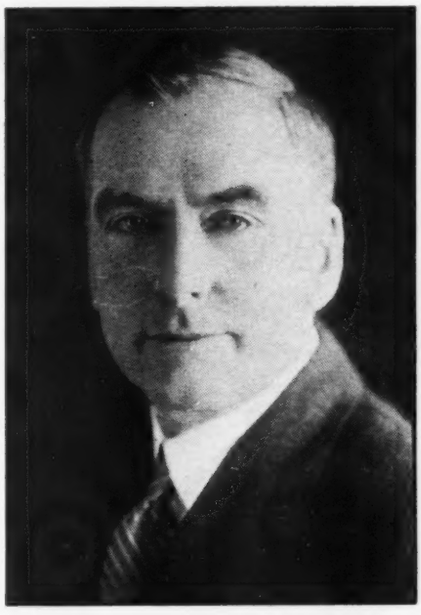
The matter of saying in a meaningful way that he was most gratified at losing a public contest to one so worthy to win is a simple enough thing, but it is an index to "Gene" Sullivan. He is of interest to readers of an oil publication because he has played a leading role in the development of the Salt Creek field. As vice-president of the E. T. Williams Oil Co. he was instrumental in introducing the competitive phrase of pipe line outlet from the field and as president of the E. T. Williams company he now carries on the operations then begun.

His contribution to the upbuilding of the oil industry includes his part, with E. T. Williams, in developing the Salt Creek properties of the company; in financing and constructing the Central Pipe Line Co.'s system from Salt Creek to Casper and in concluding an arrangement with The Texas Co. whereby the latter entered the Rocky Mountain field as a refiner, with a plant at Casper taking the oil transported by the Central Pipe Line Co. In addition, the Williams company, from which E. T. Williams retired some months ago, controls the Omaha Refining Corp.

Mr. Sullivan was born in Derry, N. H., on Nov. 22, 1874. The story of his early life is an oft-told tale, having its parallel in the stories of men who have had to struggle mightily for their education. He went to Omaha in 1892, entered a law school and was graduated in 1895. The following year he went to Wyoming, living for a time at Cody and later at Basin, and was identified with companies engaged in the construction of irrigation systems. He also engaged in the practice of law in Big Horn county and remained there until 1909, when he became an official of the Williams oil company.

The Irish and politics being so thoroughly in affinity it requires no italics, black-face type or editor's notes here to prove that Mr. Sullivan has been quite interested in governmental affairs. This interest has not been toward the holding of office, although twice he was elected state representative, serving as Republican floor leader the first term and as speaker of the house the second. He has been content, rather, with inter-party affairs and to the lending of his talents to the task of keeping before the party the correct perspective. He did yield to the urgings of Republican leaders in 1924 and made the race for governor.

Knowing Mr. Sullivan's preferment for comparative quietude, the writer is certain that the election of the Democratic woman candidate gave Mr. Sullivan no bad moments and that his graceful felicitation of his opponent was sent in all sincerity. While the battle was on, however, the Republican standard bearer tried for victory.—L. E. S.



Eugene J. Sullivan

Burner Men's Convention Chicago In April

Staff Special

CHICAGO, Jan. 10.—Dates have been set for the next three-day convention of the American Association of Oil Burner Manufacturers. The organization will assemble April 1, 2 and 3 at the Edgewater Beach Hotel, Chicago, for its annual convention, election of officers and exhibition.

Among other important developments at this meeting, plans are being made to change the organization's name. This will involve an amendment to the constitution which also is expected to admit dealers as well as manufacturers to full membership.

Comparatively little has been done about a program as there is plenty of time to work out arrangements for timely discussions and entertainment. It is expected, however, that Wednesday night, April 1, will be left open for the Chicago contingent to entertain the visitors. That is the idea expressed by J. W. Owens, Federal Gauge Co., head of the convention committee now busy in Chicago. Thursday night will be the occasion of the annual banquet and it is thought probable the convention may finish its business and close Friday afternoon, April 3.

The committee of which J. W. Owens is chairman includes J. L. McCormick, Hardinge Bros., Inc., Chicago; E. J. Smith, Gill Manufacturing Co., Chicago; J. I. Janette, Jr., Janette Manufacturing Co., Chicago; Homer Linn, American Radiator Co., Chicago; R. W. Barry, Drying Systems, Inc., Chicago, and Wallace C. Capen, Home Appliance Corp., St. Louis.

Receivers Make Report On Elk Hills Lease

By Special Correspondent

LOS ANGELES, Jan. 10.—Receivers for the Elk Hills naval oil reserve have just reported to United States District Judge McCormick, who is shortly to reach a decision in the government's suit for cancellation of the Pan American Petroleum Co.'s leases on the reserve, that the government's revenue from petroleum produced there during November was $237,238.19.

In their report for the month the receivers point out that since the government's cancellation suit was instituted the navy's share of production from the reserve has amounted to $1,320,687.55, in addtion to which there is still in reserve storage oil amounting to 7869 barrels having a market value of about $8,417.76. Production on the reserve is being obtained from 13 oil and gas wells and two gas wells, the report says.

New Company to Run Refinery

WICHITA FALLS, Jan. 10.—Organization of the Falls Refining Co. was announced here this week when H. W. Roberts severed his connection with the Griswold Oil Corp. to become general manager of the new company.

The Falls Refining Co. has obtained possession of the skimming plant here formerly known as the Bankers Petroleum & Refining Co. The plant is of the skimming type and has a capacity of around 1000 barrels per day. Crude is being obtained and the refinery put in shape to begin operations about Jan. 15.

To Handle General Products

WALLA WALLA, WASH., Jan. 9.—M. C. Brooke & Son, owners of the Skookum service station here, recently began the distribution of the products of the General Petroleum Corp., according to an announcement made by A. M. Brooke.

It will also furnish other stations in the city with General gasoline and motor oil, and has already lined up Frank W. Tierney & Sons Co. and G. W. Jones to handle these products.

DUBUQUE, IA., Jan. 9.—The name of the Dealers Oil Co. has been changed to Rainbow Oil Co.

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REFINERS OF PETROLEUM

SAN ANTONIO, TEXAS

Home Made Distillate Treating Plant Cuts Losses And Fire Hazard

By Paul Truesdell
STAFF REPRESENTATIVE

Article 1

CLEVELAND, Jan. 10.

BATCH treating with sulfuric acid and neutralizing with caustic soda of light oils has always been a source of considerable grief to refiners. Of course at most plants in late years the practice of acid treating the benzine from the straight distillation of crude has been abandoned, although at some refineries it is still necessary.

But the widespread use of cracking processes, nearly all of which produce a pressure distillate that carries a large percentage of olefins, diolefins and other unsatu ated compounds, has aggravated the problem by largely increasing the volume of material that must be acid-treated before rerunning in order to make a satisfactory motor fuel.

And the problem will continue to increase in seriousness as the production of cracked distillate increases because sulfuric acid treatment is the only generally known and accepted method of removing the unsaturated compounds, and their removal is demanded by the trade —removal of the most of them at least.

Refiners who are making pressure distillate and who have stuck to the ordinary batch treating method, blowing with air in an agitator to cause a thorough mixing and to bring about intimate contact between the distillate and the acid, are encountering two main troubles:

1—Large losses from evaporation caused by agitation and turbulence induced by the air blowing, and the escape of the vapors through the roof of the agitator. This loss frequently runs as high as five or six per cent, higher sometimes.

2—Frequent fires and explosions, always troublesome and sometimes serious, resulting from ignition of the vapors escaping from the agitator. By the way, the exact source of some of these fires seems unexplainable as will be shown in a later story by the statements of some refiners who have had experience with them.

No. 1—Close up of the coils in which a thorough acid-distillate mixture is made. The lead line carrying the acid enters the 6-inch pipe leading into the right hand 12-inch coil between the valve and the flanged head

There have been some continuous treating systems developed of various types, mostly rather expensive, and some of them are in use in the larger plants. So far as is known, however, there is no method or equipment for continuous treating of light oil that can be bought by and installed in the plant of the small or medium sized refiner at a reasonable cost.

This need not discourage him, however, because he can make one for himself out of the equipment that can be found lying around in most any refinery yard and he can do it with the ordinary labor to be found available in any refinery.

To prove this, one progressive Mid-Continent refiner has developed and built a closed treating system at a cost of not more than $1000 that has cut down the treating loss to practically nothing, aside from the unavoidable loss caused by the removal of the unsaturated compounds, and that has cut down the fire hazard very much. And he did not buy a single new piece of equipment to do it. But he had to do considerable experimenting before he got it just right.

This refiner has a very large cracking installation and a consequent large production of pressure distillate all of which must be acid and soda treated before re-running.

The basis of this treating plant is an ordinary 1000-barrel agitator the like

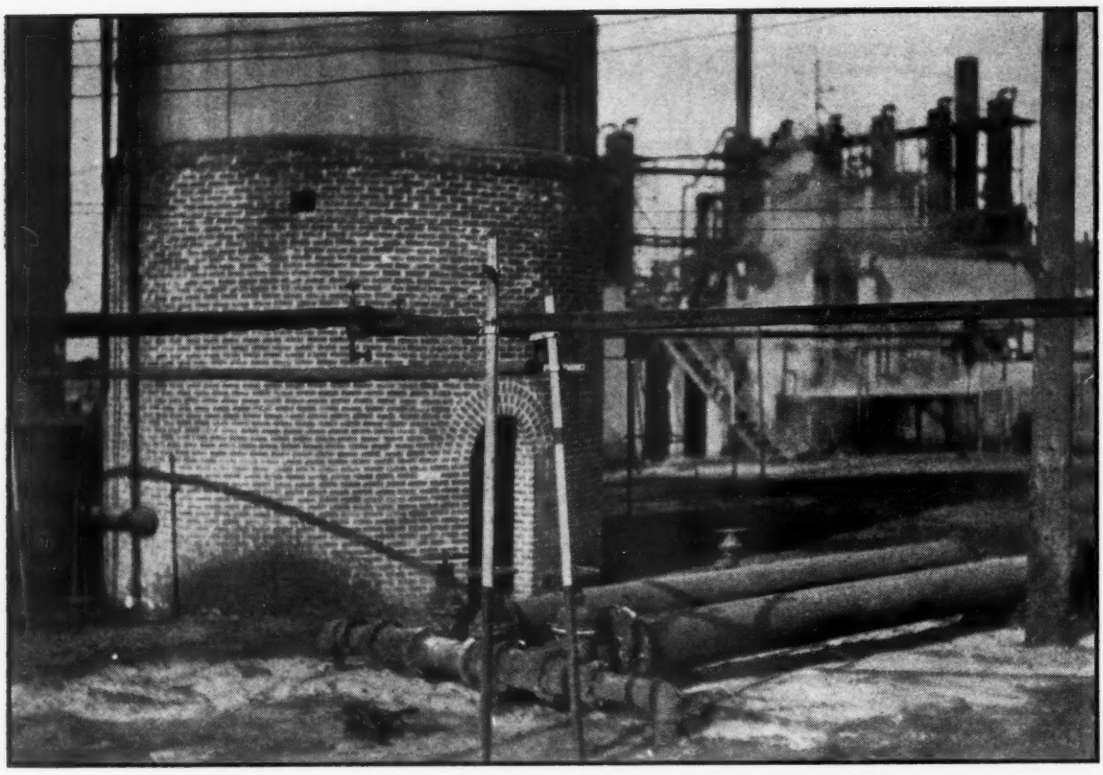
Cutting Acid-Treating Losses

FIRE danger and excessive losses from evaporation have been the two chief troubles of refiners in acid treating pressure distillate and this treatment is necessary at present for nearly all the benzines produced by the commercial cracking processes in use, before re-running.

Doubtless many refiners have solved the problem to their satisfaction but this is the first time, so far as we know, that any refiner has permitted the facts he has discovered in connection with it, and the details of the equipment he is successfully using to be published.

We are glad to be allowed to pass on this valuable information to other refiners and we believe the refiner who made it possible, although he will not allow his name to be used, is entitled to the thanks of other refiners who are still having more or less trouble with acid-treating.

This article gives the details of equipment and method of operation of this refiner's simple and efficient treating plant. Article 2 next week, will discuss the fire hazard in connection with acid treating more in detail, a further step that could be taken to reduce it and a description of the simple method worked out by this refiner to doctor treat his pressure distillate.—Editor.



No. 2—Another view of the treating coils showing how they hook up with the agitator which is shown on the left, bricked up at the bottom

of which can be found in almost every refinery in the country. The agitator was already on the ground. The first part of the system, that handling the acid treating, consists of a centrifugal pump, about 100 feet of six-inch steel pipe, two 20-foot lengths of 12-inch pipe, an acid egg which was made from a small, scrapped tank, and the agitator.

Most any little tank would do for the acid egg, provided it was tight enough to withstand moderate pressure.

If it was leaky it could easily be made tight enough by electric welding around the rivet heads and along the seams—that is provided there were no unnoticed weak spots in the plates away from the seams.

Patch Welded On

At this particular plant, a tank big enough to hold about two tons of acid was found. There was a large hole in one side of it but a patch was electrically welded over this. The seams and rivets were made tight in the same way.

The tank was then lead lined, requiring the services of a lead burner and this was the only job that called for the services of labor outside the regular refinery force. The cost of the lead lining was about $150 or $200.

The pump and the six-inch pipe used cannot be properly charged to the account of the acid treating system because they were already there. It is simply the sort of pump used in any refinery to transfer material from the pressure distillate storage tanks. The whole treating system is simply hooked into the pumping-out line from the distillate storage.

This pumping-out line originally carried the pressure distillate from the cracking plant storage to the agitator for batch treating so no relocation of the line was necessary.

Photograph No. 1 is a close-up view of all there is to the acid treating part of the equipment except the acid egg.

Air Pressure on Acid

An air line from the refinery compressor plant leads into the top of the acid egg through a reducing valve and pressure of around 40 or 50 pounds to the square inch is maintained on the acid. The egg is equipped with two gage glasses on the side to show the height of the acid inside and check the rate of application.

The acid egg is fitted with a quarter-inch line in the bottom with a regulating valve which feeds the acid at a predetermined rate into a small lead pipe which carries it to the point where the distillate enters the treating system.

Referring to Photograph No. 1, the distillate from the cracking stills is pumped through the six-inch pipe that can be seen leading in from the right. The distillate enters the first 12-inch coil (on the right) at the end nearest the reader and the lead acid line enters th short length of six-inch pipe between the valve and the bolted and flanged head, that carries the distillate into the coil. The lead pipe cannot be seen because, like every other part of the piping except the treating coils and headers themselves, it is buried.

The pressure benzine is pumped through the six-inch pipe at the rate of from 500 to 600 barrels an hour. The air pressure on the acid and the opening of the acid outlet valve are regulated so as to overcome the pressure resistance of the distillate stream and force into it acid at the rate of about six pounds to the barrel. This is simply a matter of computation and a little experimenting.

Of course, that amount of acid would apply only to the particular distillate being treated at this plant. The requirements of acid per barrel would probably vary with almost every pressure distillate according to the cracking process used and the character of the charging stock.

The pressure necessary to inject the required amount of acid into the stream also would be a variable factor in almost every plant, depending on the velocity and volume of the distillate stream to be treated.

Thorough mixing, physically, and the element of time necessary for the oil and acid to be in contact are the two principal problems faced at this refinery when the treating system was being designed. It was found that the time element was complied with by leaving the acid and distillate in contact during their passage through the two 20-foot coils.

Physical mixing of sufficient thoroughness was a little more difficult problem.

As originally laid out, the mixing coils were of six-inch pipe instead of 12-inch and this was found as satisfactory as the 12-inch coils have proved. With the object of producing thorough mixing by causing extreme turbulence, the pipe was at first fitted with slanting baffles set six inches and staggered in the top and bottom sides of the pipe. The pipe was cut into six-inch sections with an acetylene torch and the baffles welded into

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the inside, the joints being then welded together again.

This did not give thoroughly satisfactory results and the baffling was changed to the system now in use. This consists of vertical baffles placed about 15 inches apart and perforated with three and a half inch holes. The holes are placed at the top of one baffle, at the bottom of the next and so on.

The method of cutting the pipe in sections and welding in the baffles also was abandoned as being too laborious. The baffles in the present system are perforated at four equidistant points and small steel spacing bars, running through all the baffles and with ends resting against the head flanges of the coils, hold the baffles in position.

Photograph No. 2 shows the treating coils in their relation to the agitator, the bottom of which, bricked up, is to be seen at the left of the picture.

As stated, the distillate meets the acid stream as it enters the first coil. Oil and acid, surging and tumbling, pass through the baffles in this coil, through the six-inch header into the second coil and back through the valve at the near end of the second coil and on to the left, through the six-inch line, into the bottom of the agitator.

Turbulence Is Avoided

The distillate-acid mixture is fed into the bottom of the agitator to reduce turbulence with consequent evaporation loss. At the rate of 600 barrels an hour it takes about an hour and a half to fill the agitator.

The mixture enters the agitator quietly and rises with an unbroken surface. Its level mounts in the big tank like the tide in the ocean, almost imperceptibly and there is very little smell, even, to be caught when looking down through the roof.

No blowing at all is done in the agitator, the mixing of acid and distillate, which is the object of the blowing in the ordinary batch treating system, having been accomplished in the closed coils. The absence of blowing, of course, is what cuts down the evaporation loss.

When the agitator is full, drawing off of the sludge begins. About an hour is allowed for this and at the end of that time a spray in the top of the agitator is turned on and the distillate given a thorough washing with water. It takes about 30 minutes for the water to settle out and then the distillate is allowed to stand for about half an hour longer.

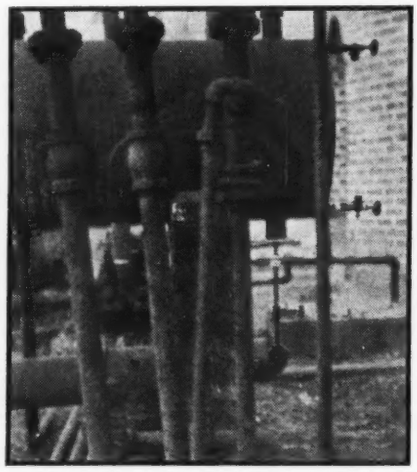
Acid Transferred by Air

The sludge is withdrawn through a line at the tip of the conical bottom, according to ordinary practice, into a sludge tank from which it is flowed to the acid-reclaiming plant by air pressure.

Then comes the caustic soda treatment to neutralize the traces of acid remaining in the distillate.

This system, also, is very simple and was made entirely of materials and by labor that was at hand. The line for pumping out the distillate from the agitator is equipped with another centrifugal pump. Except for the fact that the caustic egg is mounted horizontally on brick piers and feeds directly into the distillate line from above, it is hooked up in a similar manner to the acid egg.

Photograph No. 3 shows the caustic egg with the quarter-inch feed line at the end right, equipped also with a regulating valve to govern the rate of flow of the solution into the distillate



No. 3—The caustic soda egg showing the quarter-inch pipe that carries the caustic solution into the distillate stream and the regulating valve that controls its flow

stream. The distillate line coming from the agitator can be seen lying horizontally directly under the caustic egg.

Valve Controls Caustic Flow

It is brought up vertically out of the ground to an elbow which carries it off horizontally. The caustic inlet lines enters the pipe through a four-inch connection as can be seen in the picture. The value on the quarter-inch line is opened sufficiently to feed into the distillate stream the desired amount of caustic solution.

Beyond the pump, the mixture of distillate and caustic soda passes through four six-inch coils, baffled the same as those that handle the acid-distillate mixture, and thence into a settling tank that is simply an ordinary 5000-barrel storage tank.

Apparently the time necessary for the caustic solution and the distillate to remain in contact in order completely to neutralize the acid in the distillate with an economical use of soda, is longer than for the acid to do its work and that is the reason for having twice as many coils in the caustic treatment system as in the acid system.

But even this added length of travel was found at this plant not to give entirely satisfactory results, so a complete remedy for acidity was found by leaving a layer of caustic soda from three to six inches deep on the bottom of the settling tank at all times. The draw-off line for the soda sludge, accordingly, is placed far enough above the bottom of the tank to maintain this layer.

From the soda settling tank, the distillate is ready to go to the rerun stills.

The difficulty of getting complete neutralization might be less in a plant where it was possible to use less acid in the treatment of the pressure distillate, in order to get the desired results.

The system as worked at present, according to the operating head of the refinery, involves no more loss measureably than merely pumping the distillate from one tank into another. While at this plant the process is not strictly continuous, it would be easy to make it continuous at a plant where there are two agitators and where volume of pressure distillate produced would justify it.

If two agitators were to be used to make the process continuous, of course, the procedure would be to hook the line up to both agitators through a manifold that would make it possible to divert the stream into one agitator when the other was full. The process could be timed so that one agitator would be filling while the contents of the other was being washed, settled and pumped out.

As to the corrosion caused by the acid. No protection is given the pipe coils, only the acid egg and the agitator being lead lined, except that the pipe that carries the acid to the treating coils is of lead. At this particular plant the original coils stood up for about eight months against corrosion. It was when it was necessary to renew the coils that the 12-inch pipe was substituted for the six-inch and the refinery officers say they can see no particular advantage in having the larger size of pipe. The big 12-inch lengths were put in simply because they were on hand and available for that use.

The rapidity of the process of corrosion of the pipe would vary in practically every plant, due to varying conditions, the principal factor being the amount of water carried by the distillate, which in turn, would depend largely upon the cracking process employed and the charging stock used. The greater the water content of the distillate the more rapid the corrosion.

As far as the acid egg itself is concerned, many refiners doubtless would regard lead lining of it as unnecessary because of the fact that it contains concentrated acid and strong acid is practically harmless to steel, at least much less corrosive than when diluted with water.

According to the refinery superintendent of this plant, it is worth while to line the egg with lead. He says that there is unavoidably more or less moisture in the acid even when it is in concentrated form and for this reason more or less corrosion would occur in the egg if the acid was allowed to come in contact with the steel plates. The fact that the egg is held under pressure, also, makes it desirable to prevent corrosion which might make weak spots and cause bursting of the tank.

Next week Article 2 will discuss some of the causes of agitator fires in batch treating of light oils, the experiences of some refiners with such fires, and a simple and successful doctor treating system worked out by the plant we are talking about.

COMPLETE NEWS INDEX FOR DECEMBER

HEREWITH N. P. N. publishes a detailed index of all articles appearing in its December issues, outside of routine department news which the reader will have little difficulty in finding in back issues because of its relative same position in each issue.

The indexing has been done by using the heading for the article, or at least enough to identify the article.

This departure is offered by this publication because of the insistence of many readers that they be given some form of index. If readers who save their issues of N. P. N. for reference purposes will tear out these pages and file them they will have a complete index to all articles appearing in its news pages outside of routine department news.

Readers will also notice that each issue carries on its second news page a short index of special articles and giving the pages on which all departments are to be found. This complete index is offered for reference purposes only, to be torn out of the issue each month carrying it and filed. If the form in which it is here offered can be changed, or new listings introduced to make it of greater reference value to readers, the editorial staff will appreciate it if the readers will give their suggestions along this line.—Editor.

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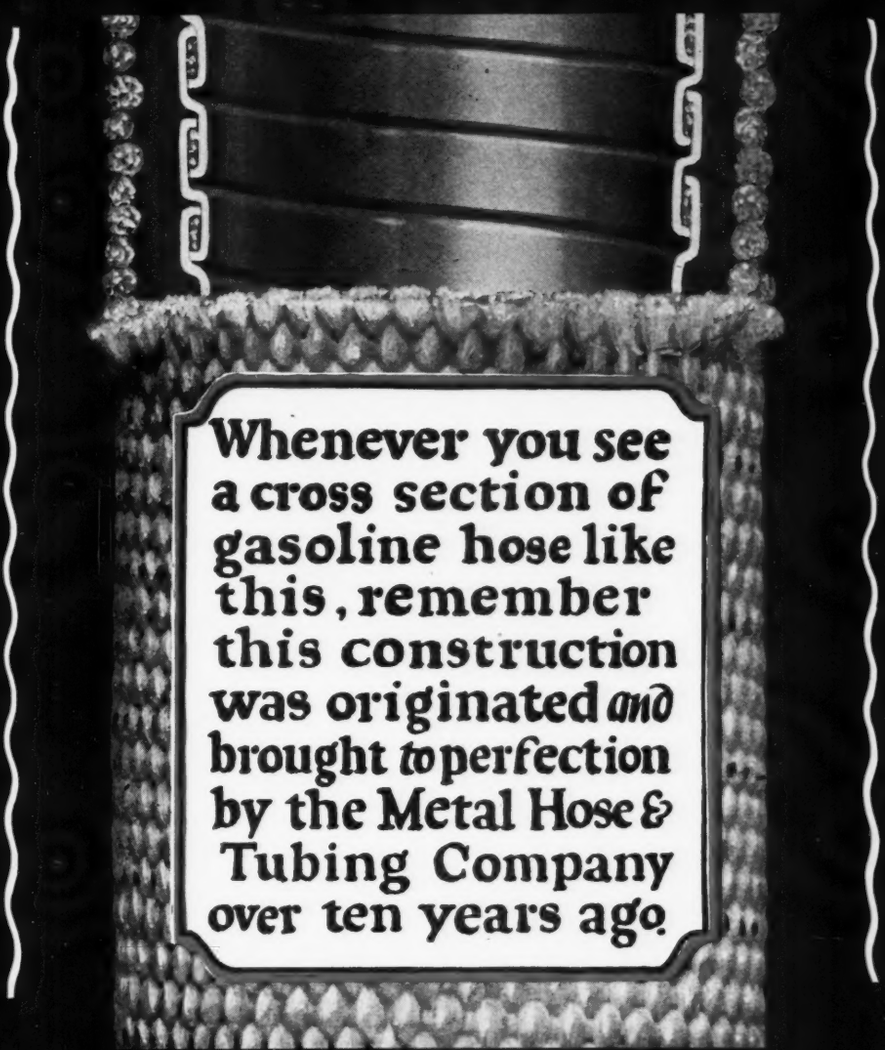

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HOUSTON
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SAN ANTONIO
1401 So. Flores St.

HERE AND THERE

Recent changes at the New England branch of the Crew-Levick Co. which started with the transfer of Emile E. Grignard, for several years New England manager, Philadelphia, included the appointment of B. O. Pinkham, who was assistant manager, as sales manager for New England; also Parker H. Kennedy, who was promoted to manager of operations; and the transfer of Larry Davis from the New England division to the Ohio division with headquarters at Cleveland, O., where he is learning the marketing business from the bottom up, in accordance with his own wishes, according to a recent issue of "Doherty News."

* * *

The Rio Grande Oil Co., at Globe, Ariz., has enjoyed a large increase in business in this district, especially in fuel, gas and lubricating oils, and a large gallonage of gasoline, according to C. L. Fauber, local manager. "Looks like a big year in Arizona," Mr. Fauber says.

With the Inspiration and Miami Copper companies installing much new equipment and enlarging their plants in Arizona and with the higher price of copper, great activity is in evidence, Mr. Fauber reports. The copper companies are large consumers of fuel oil.

* * *

Charles P. Hannen, formerly service station manager at Denver, Colo. for the Sinclair Refining Co., has become sales representative for the Guarantee Liquid Measure Co. for Colorado, Mr. Hannen will devote his time to the Independent trade in his territory, working out of Denver.

* * *

R. A. Ludlow, formerly with the Vacuum Oil Co. and recently manager of the eastern district of the Transcontinental Oil Co., on Jan. 1 became special representative of the Pennzoil Co. for New England with headquarters in Springfield, Mass.

* * *

H. M. Weir, Indianapolis, Ind., formerly with the development department of the Standard Oil Co. of New Jersey left in September to engage in special research work at the University of London.

* * *

C. L. Wilquin, formerly state manager for the Motopower Sales Co. of Kansas City, Mo. for Indiana and Ohio, has been promoted to general sales manager, at Kansas City.

George A. Sonricker, formerly refinery superintendent of the Texhoma Oil & Refining Co., Wichita Falls, is now general superintendent at the Grandfield, Okla., plant of the Bell Oil & Gas Co., Tulsa.

* * *

A. B. Macbeth

Natural Gas Man Head Of Association

By Special Correspondent

LOS ANGELES, Jan. 10. — The Chamber of Mines and Oil in this city has just elected as its president for the coming year A. B. Macbeth, vice-president and general manager of the Midway Gas Co. and the Southern California Gas Co. G. M. Swindell, publisher of the Bakersfield Echo, is secretary of the Chamber. Edwin Higgins is its executive secretary. The other officers are Philip Wiseman, and Chester W. Brown, vice-presidents; and M. H. Whittier, treasurer. The retiring president is A. C. McLaughlin of the Associated Oil Co. in San Francisco, who held the office for two consecutive terms.

Few men in the gas business in the west are better known than Mr. Macbeth. He came to California 10 years ago, from Kansas City, to take the executive position he now occupies with the gas companies of this state. Early in life he accumulated considerable experience in the drilling and development of gas and oil wells in Kansas and Oklahoma. He was for a time engineer and superintendent for the Kansas City Gas Co. and was later general manager of the Kansas Natural Gas Co.

In addition to his executive position with the Southern California and Midway companies, and the presidency of the Chamber, Mr. Macbeth is a director of the San Joaquin Light & Power Co., the Union Bank & Trust Co., and the Union Oil Co. of California. He is a member of the executive committee of the latter.

During 1911 he served as president of the Natural Gas Association of America, and was later a director of that organization.

* * *

Guy M. Baughman, who recently resigned his position with the Roxana Petroleum Corp., at Sullivan, Ind., is now agent for Green County, Ind., for the Service Oil & Gas Co., Sinclair distributor. The company's bulk plant is at Switz City, Ind., where Mr. Baughman's headquarters will be. Mr. Baughman will also distribute products in Sullivan county.

The Service company will soon be operating service stations at Sullivan, Carlisle and Worthington, Ind.

* * *

S. H. Brooks, formerly president of the Oil Conservation Engineering Co. at Cleveland, has organized the Brooks Engineering Corp., and opened offices at 318 East 12th st., Los Angeles. He's arranged for a line of tank fittings and equipment, including the Farr Hydraulic system and the Stough tank roof. He expects to design additional equipment himself.

* * *

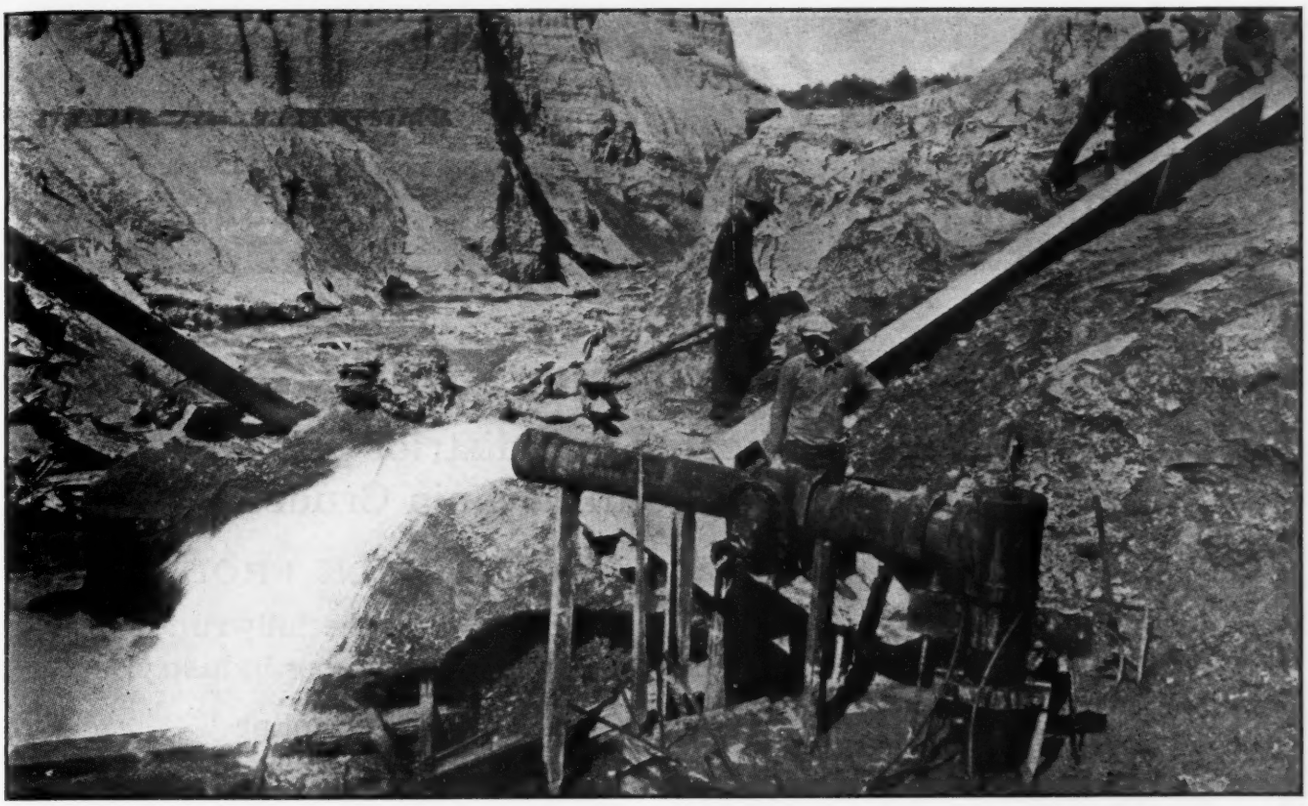
H. V. Ewing, formerly sales representative in Nebraska for the Roxana Petroleum Corp., has been promoted and transferred to the home offices at St. Louis, according to R. R. Frecheville, western division manager at Kansas City. Paul B. Caldwell succeeds Mr. Ewing.

* * *

H. R. Tracy has just organized the Penn-West Oil Co., Chicago, Ill., to distribute Pennzoil motor oils in Chicago territory, according to J. H. Brink, division manager for The Pennzoil Co. at Indianapolis, Ind.

* * *

Mary Ann Fichter was born on Jan. 4 to Mr. and Mrs. Glenn J. Fichter, Columbus, O. Miss Mary Ann is the granddaughter of Curtis H. Wilson, who is in the northeastern division of the Standard Oil Co. of Ohio.



Another view of the Tisdale well under control. The water flows from this well by gravity and through the Salt Creek and Teapot Oil Fields, a distance of 30 miles. The pressure head at points of delivery will be sufficient to insure fire protection

Water From Remarkable Artesian Well Is Piped to Salt Creek

CASPER, WYO., Jan. 11

WATER, water every where, and not a drop to drink," was the plaint of the Ancient Mariner. His lament has been uttered many times, in considerably more forceful fashion, during the development of the Salt Creek field.

The problem of water in this field has been a big one. Portable water does not exist in any quantity within reasonable distance of the field. It has been the practice to construct earthen dams across the numberless ditches and draws which wrinkle the surface of the field and thus trap the run-off of the spring rains. When the dry season comes, evaporation and withdrawal of the water for field use soon deplete the small reservoirs to the point where the water is heavily impregnated with alkaline matter.

Small distillation and condensing plants have been set up in the field by many companies to provide drinking water, but the output had to be used sparingly, as such supply was not great. Along in the middle of the summer, with the drying up of the little reservoirs, living conditions were sometimes unpleasant.

All that is past for a great many, for the Intermountain Water & Power Co. has started delivering pure, wholesome water to the people in Salt Creek who have contracted for it.

This company, organized some months ago, was set up for the purpose of making available to Salt Creek people the water from one of the most remarkable wells ever drilled in the state. Back in 1918 A. J. Hardendorff, drilling contractor, put down a well on Tisdale dome, in Johnson county. He was looking for oil, but at 2195 feet he struck the Tensleep sand and water proceeded to flow to a height of 10 feet above the top of the 10-inch casing. Mr. Hardendorff, without any elation at all over his find, went away and let it flow.

With little diminution, the flow has continued ever since and recently when gauged by means of a weir, showed an average flow of 133,000 barrels in 24 hours.

The well went right on flowing and became quite a popular place. Its flow cut a deep gorge down the hillside and a good-sized swimming pool was formed at the bottom of the hill.

Then Mr. Hardendorff, with some of his associates, began to plan something more than a year ago to utilize this wholesome water, located only about 20 miles northwest of where it was badly needed. The well was on state school land and no great difficulty was experienced in getting the state to advertise the land for sale. As it had little value for farming or stock raising, Mr. Hardendorff bid the tract in at a small price and thus had title to the well.

Financing of the company and signing of contracts with Salt Creek operators then was effected and the company laid its line. Deliveries of water have been started. The line is of 8, 10, and 12-inch pipe, gravity flow from the well to the rim-rock west of the Salt Creek field, where one pumping station is located to lift the water over the rim-rock to tankage. Deliveries during the season of highest consumption, are expected to total 50,000 barrels daily or more.

The company is headed by Mark U. Weber, who is associated with Mr. Hardendorff in other interests. W. T. Funk, general manager for the Carter Oil Co. in the Rocky Mountain territory, is first vice-president and Mr. Hardendorff is second vice-president.

TROY, ALA., Jan. 11.—License taxes of 1 cent per gallon on gasoline have been levied at Enterprise and Elba, Ala., and a tax of 1½ cents on gasoline and 1 cent on kerosene has been levied at Andalusia, Ala., according to G. H. Dinkins, special agent for The Texas Co. at Troy.

GARDNER, KAN., Jan. 10.—The Gardner Oil Co. has enlarged and remodeled its service station here, so that it now has a three-canopied drive. Mr. Patton and Mr. Walters are owners and are enjoying a good business, according to Clyde Mathews, salesman for the Cities Service Oil Co. at Paola, Kan. The Gardner handles Cities Service oils and Miller gasoline.

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100% Pure Pennsylvania Grade Products

made in a Refinery located in a district producing one of the lightest grades of Pennsylvania Crude.

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are available in six grades, assuring the proper grade for your blend.

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300 Mineral Seal Oil

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NEW OIL STATION CONSTRUCTION

Oolitic, Ind.—Oolitic Oil Co. has purchased a lot at Orleans, Ind., on which it will build a filling station, to be opened by March 15, according to Ellworth King, manager.

The company has recently completed two service stations at Bedford and Mitchell, Ind., and expected to open its new garage on Dec. 22. The garage has 17,000 feet of floor space. Stations handle Shell gasoline.

* * *

Greenfield, Ind.—Otto Rettig & Son, who operate the Oil Products Co. of this city, are building a three-pump service station and garage, to be equipped with free air, water and crank case service. The company is also installing 36,000 gallons storage.

* * *

Paintsville, Ky.—J. K. Wells and V. D. Splane purchased lot for filling station, which will be first of a number they plan to erect on Mayo trail.

* * *

Lincoln, Neb.—Mutual Oil Co. to build service station, warehouse, garage and pumping station this spring.

* * *

Washington, Ind.—Johnson Oil Co. bought property here on which it will build filling station in spring.

* * *

Scottsville, Ky.—Standard Oil Co. of Kentucky purchased property for filling station.

* * *

Washington, Ill.—Standard Oil Co. of Indiana bought property for filling station.

* * *

Madison, Wis.—Central Development Co. to erect filling station, to cost $2,900.

* * *

Ft. Wayne, Ind.—Sinclair Refining Co. leased property for filling station.

* * *

Ironton, O.—Mayo Gas & Oil Co., Ashland, Ky., to build service station.

* * *

Canton, Ill.—National Refining Co. purchased site for service station.

* * *

Yates City, Ill.—Standard Oil Co. of Indiana to erect service station.

* * *

Gibson City, Ill.—Robert Crooks erecting service station.

* * *

Geneseo, Ill.—Oscar Drehman building filling station.

* * *

Winamac, Ind.—Roscoe Clester erecting filling station.

* * *

Belleville, Ill.—A Hosea Smith to erect filling station.

Superior, Wis.—Northwestern Oil Co. is planning to build service stations this winter at Hibbing, Mialca and Little Falls, Minn.; Spooner, Stanley and Ashland, Wis.; and four additional stations at Duluth, according to J. P. Deegan, manager of service sales. The company will have its warehouse at Virginia, Minn., completed by spring.

* * *

Mexico, Mo.—Pierce Petroleum Corp. building service station here, and will build at Jefferson City, Columbia, Poplar Buffs and Cape Girardeau soon, reports A. H. Meeks, agent here for Pierce.

* * *

Ashland City, Tenn.—F. L. Haynes and T. E. Callis converting old building into garage and filling station.

* * *

Jackson, Tenn.—Standard Oil Co. of Louisiana to build three service stations here.

* * *

Greencastle, Ind.—Homer Frazier and Fred Lancaster completing filling station.

* * *

Osceola, Ia.—Collins Oil Co. purchased property for filling station.

Automobile Production Falls In November

WASHINGTON, Jan. 10.—Production of passenger cars and motor trucks in the United States in November totaled almost 62,000 vehicles less than production in October, according to reports of 197 manufacturers to the Department of Commerce. The total output of both classes was 227,575 as against a total of 289,343 in October. Comparative production figures of the last three years follow:

PASSENGER CARS

	1924	1923	1922
January	287,353	223,822	81,696
February	336,371	254,782	109,171
March	348,356	319,789	152,962
April	337,045	344,661	197,224
May	279,455	350,460	232,462
June	217,935	337,442	263,053
July	237,668	297,413	225,103
August	251,551	314,431	249,498
September	260,171	298,964	187,711
October	257,900	335,441	217,582
November	201,691	284,939	215,362
December	.....	275,472	208,016

TRUCKS

	1924	1923	1922
January	28,925	19,732	9,596
February	31,156	22 173	13,360
March	34,118	35,284	20,036
April	36,158	38,085	22,665
May	33,415	43,730	24,120
June	27,884	41,173	26,354
July	25,248	30,692	22,083
August	27,510	30,872	24,711
September	30,805	28,578	19,495
October	31,443	30,153	21,824
November	26,884	28,085	21,967
December	.....	27,762	20,394

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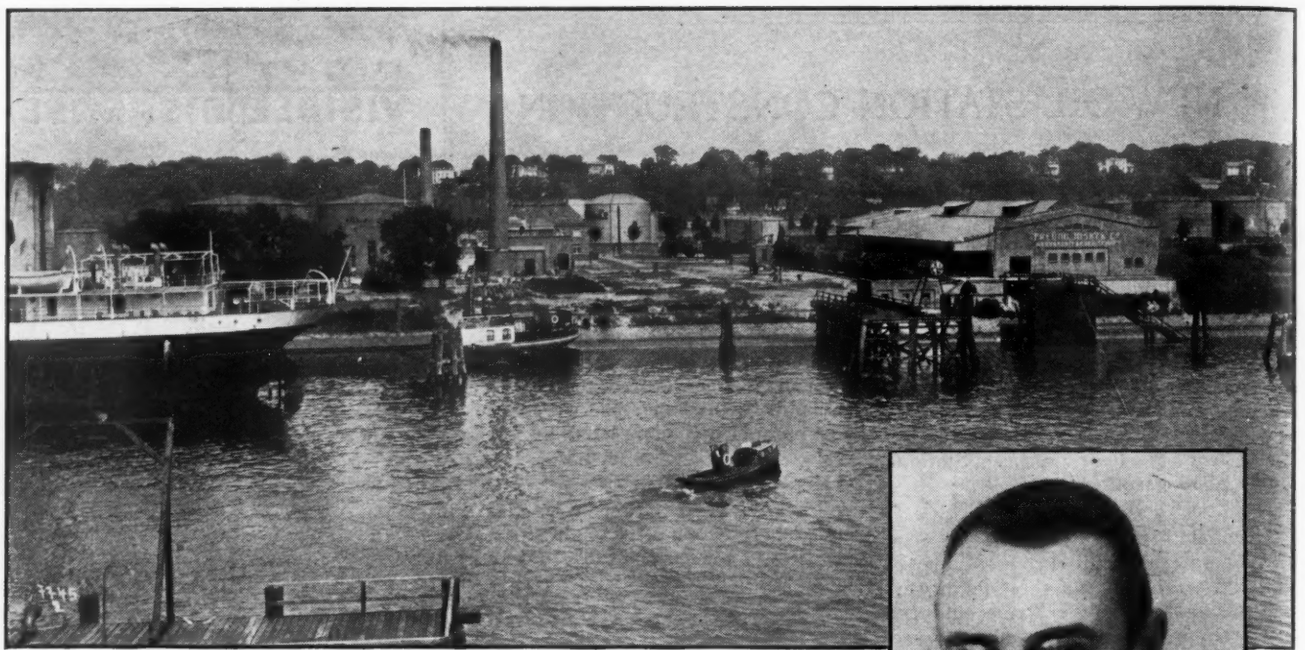


Above—Importing and distributing plant at Hamburg, Germany, of the German-Overseas Petroleum Corporation
Right—Walter Josky, president of the company

German Company Opens Offices In U.S. At Houston

HOUSTON, Jan. 10

THE first German petroleum company to establish its own buying and shipping offices in the United States since the war is the German-Overseas Petroleum Corp., successors to Freund, Josky & Co., of Hamburg. Its American representative is Louis F. Rothermel, who has arranged for terminal facilities at Houston and has opened offices at 907 Keystone building.

Walter Josky and Albert Freund are the two presidents of the Deutsch-Ueberseeische Petroleum Aktiengesellschaft, which is the German style of the corporation and which translated into English means the German-Overseas Petroleum Corporation.

Mr. Josky, who has been in the United States about six weeks making his arrangements with Mr. Rothermel, is advised from Hamburg by Mr. Freund of the working out of details incident from transforming the business from a partnership (kommanditgesellschaft) into the corporation of the style hereinbefore mentioned.

In addition to the purchase of Gulf Coastal lubricants for distribution in Europe by Mr. Josky's company, the buying office in charge of Mr. Rothermel will also handle gasoline and fuel for consumption abroad. Mr. Rothermel, who at one time was sales manager of the Deepwater Oil Refineries, Inc., at Houston, has been more recently the principal in an exporting firm at New Orleans doing business under the name of Rothermel & Co.

The German-Overseas Petroleum Corp. operates import terminals at both Hamburg and Antwerp. It is probably the largest Independent distributing company in Continental Europe that is handling American Petroleum products.

Mr. Josky is authority for the statement that Hamburg has now regained its old position as the central oil marketing point of Continental Europe and that no other port in that part of the world has equal facilities for handling these products.

Louis F. Rothermel
Rothermel & Co.

Hamburg is declared to be the only place in the world where an exclusive oil marketing port is maintained. An island at Hamburg is set apart for the petroleum port and the terminals on it are devoted exclusively to oil and its products.

On this island, along one side of which flows the river Elbe, is located the works of the German-Overseas Petroleum Corp., a general view of which is shown in the illustration accompanying this article. The plant is thoroughly modern, electrically equipped, and is described as a model installation. Four new tanks are under construction to provide about 180,000 barrels additional storage room.

Officers of the German-Overseas Petroleum Corp., besides Messrs. Freund and Josky, are two vice presidents and sales managers, Heinrich Beck and Wilhelm Kuhn; treasurer, Paula Linde; and the manager of shipping, Karl Roloff.

MOUNT HOPE KAN., Jan. 10.—The Howard Oil Co. has erected a bulk station at Burrton, according to H. R. Howard, owner.

MOUND, MINN., Jan. 10.—Dick & Glenroe have opened a service station here handling Standard Oil products, according to F. G. Desnoyers, agent for the Standard at Wayzata, Minn.

Oil is Cheaper Than Coal In Home Heating Considering All Costs

Prepared by Bureau of Standards

THE oils available for domestic heating include kerosene, gravity 40° to 48° A.P.I., gas oil, gravity 32° to 40°, and the heavier distillates, ranging down to oils having a gravity of 24°, which appears to be about the heaviest oil recommended for use with any type of burner designed for small heating plants. Oils of about 40° gravity are sometimes sold as furnace oil. As a general rule, the lighter the oil, the higher the cost.

Some burners can be made to operate with the used oil drained from automobile crank cases, and the claim is sometimes made that a burner which will handle this oil is for this reason, capable of burning any fuel oil. As a matter of fact, used crank case oil is likely to have a gravity between 24° and 30°, and would not be classed with the very heavy fuel oils.

It may be noted that the properties of an oil are by no means completely determined if its gravity is known, and that it is very easy to find two oils of the same gravity, one of which may be thoroughly satisfactory for a given purpose, while the other may be almost unusable. However, practically the only description readily obtainable concerning fuel oils is their gravity, and it seems necessary at present, to designate the oils by this admittedly somewhat inadequate method.

Comparison of Oil and Coal

The advantages usually claimed for oil fuel are cleanliness, convenience, better control of the fire, availability of the fuel at times when coal can be obtained with difficulty, if at all, and sometimes connected with the use of oil fuel, among lower cost of fuel.

There are also possible disadvantages which may be mentioned soot, odor, noise, higher cost, due to high first cost of some types of installations, or higher operating cost, and increased fire risk.

The use of oil undoubtedly involves a greater fire risk than the use of coal. The greater hazard, however, usually leads to the adoption of additional precautions, which in many localities are mandatory. The important precautions to be observed are covered by the "Regulations of the National Board of Fire Underwriters for the Construction and Installation of Oil Burning Equipments and for the Storage and Use of Oil Fuels." These regulations are recommended by the National Fire Protection Association, 40 Central St., Boston, which can supply copies of the pamphlet containing the regulations. In many localities these regulations have been incorporated, in whole or in part, into the local regulations.

Oil Will Be Superior

With a suitable installation it is undoubtedly true that oil will be superior on the grounds of cleanliness and convenience, as well as ease of control. It must not be overlooked, however, that occasionally an oil burner fails to function properly, and if allowed to burn with a smoky flame, may do more damage to furnishings and decorations in a few hours than would be done by a coal burner in several years. This does not mean, of course, that every oil burner will at some time cause such damage, but instances have been frquent enough to make it worth while for the prospective purchaser, or the owner to have the possibility in mind.

The questions of odor and noise are more appropriately considered in connection with burners.

In addition to those questions there remain those of availability and cost of fuel which are rather intimately related. The yield of the heavier oils is considerably larger than that of the lighter and the extensive use of oil for domestic heating would probably make it necessary to use the heavier oils extensively.

At present the amount of the lighter oils which can be produced is adequate to meet the demand, but the extensive introduction of oil burning appliances for house heating would probably result in a demand for this grade of fuel which would greatly influence the price. In the future, oil-burning installations which can utilize the heavier grades of fuel will undoubtedly have a distinct advantage, not only on account of the lower price, but on account of the greater quantity of such fuels available.

Detailed Data Needed

The relative cost of fuel for heating with oil and with coal, including such auxiliary costs as electric power, gas, etc., in any particular installation, could not in general be determined without detailed data, but certain general consideration are of interest. The heat of combustion of one gallon of 40° oil is about 140,000 B.t.u. Heavier oils will have a somewhat higher heat of combustion per gallon, while lighter oils will yield lower values. The heat of combustion of coal ranges from over 14,000 B.t.u. per pound for the higher grades to below 10,000 B.t.u. per pound

---

HOW does the cost of heating homes with oil compare with heating with coal? This is a question that every oil burner prospect or any other person who might only dream of burning oil, asks at one time or another. Answer to the question is usually evaded because no data of great importance seem to have been collected. The Bureau of Standards has prepared data from laboratory observations and probably with a dash of theory that may help to answer the question.

The bureau expresses the opinion that considering all factors entering into the cost of heating with oil and with coal, that oil probably would be the cheaper.

This article is part of the bureau's Letter Circular LC-133, recently published.

—Editor.

Table I—Cost per million B.t.u. with oil heating (100% efficiency assumed) and coal heating (100% efficiency assumed).

Cost of Oil per gallon	Cost of 7 gal. (1 million B.t.u.)	Cost of Coal per 2000 lb.	Cost of 84 lb. (1 million B.t.u.)
5 cents	$0.35	$5.00	$0.21
6 cents	.42	6.00	.25
8 cents	.56	8.00	.34
10 cents	.70	10.00	.42
12 cents	.84	12.00	.50
15 cents	1.05	15.90	.63

Table II—Cost per million B.t.u. with oil heating (62½% efficiency) and coal heating (50% efficiency).

Cost of oil per gallon	Cost of heat from oil per million B. t. u.	Cost of Coal per short ton 2000 lb.	Cost of Coal per long ton 2240 lb.	Cost of heat from coal per million B. t. u.
5 cents	$0.56	$5.00	$5.60	$0.42
6 cents	.67	6.00	6.70	.50
8 cents	.89	8.00	8.95	.68
10 cents	1.12	10.00	11.20	.84
12 cents	1.34	12.00	13.40	1.00
15 cents	1.68	15.00	16.80	1.26

Whose Cost?

Compare with any blended lubricating oil the cost of handling a gallon of Deepwater lubes through your plant.

Deepwater Costs	*vs*	*Blended Oil Costs*
1. Unloading to Storage		1. Unloading to storage.
2. Loading to tank trucks or packages.		2. Blending Costs:
3. Delivery to customer.		a-Interest on investment. b-Depreciation. c-Labor. d-Fuel for steam and air. e-Loss in handling oil.
		3. Loading to tank trucks or packages.
		4. Delivery to customer.

Those are real "Red" items.

And the additional cost doesn't mean a superior oil—just "superior" costs.

Deepwater Oil Refineries

The Independent Jobber's Refiner HOUSTON-TEXAS

for the lower grades. Thus one gallon of light fuel oil has the same heat of combustion as 10 to 14 pounds of coal, depending upon the grade of coal. In the comparisons to follow, the average figure, that one gallon of fuel oil has the same heat of combustion as 12 pounds of coal, will be used.

In order to heat a house, a certain number of B.t.u. must be supplied, and the cost of fuel, other things being equal, will be proportional to the cost per B.t.u. In the following table, the cost of seven gallons of oil, yielding approximately one million B.t.u. is compared with the cost of 84 pounds of coal yielding according to the assumption stated, the same number of B.t.u. as shown in Table number 1 of the preceding page.

When Comparison is Unfair

From Table 1 it might be inferred that coal at $12 per ton of 2000 pounds was equivalent to oil at about 7 cents per gallon or that heating with oil at 12 cents per gallon would cost twice as much as heating with coal at $10 per ton. Such a comparison would probably be unfair to oil, for a number of reasons. Coal is never burned completely, while the losses due to incomplete combustion of oil are probably very small in a good installation. A suitable type of oil burner will permit a close control of the fire and for this reason oil heating might be much less wasteful than coal heating. This would be particularly true in the spring and fall when heat is only required occasionally.

A fairer comparison may perhaps be made by assuming that of the heat of combustion of coal 50% is usefully applied, and that oil is used 1¼ times as efficiently as coal so that 62½ per cent of the heat of combustion of the oil is usefully applied in domestic heating. If this is true, the cost per million B.t.u. actually utilized, would be as shown in Table 2.

Close to Average Results

In using Table 2 the assumptions on which it is based should be clearly borne in mind. It is believed that comparisons based on this table will not be far from average results obtained. On the basis used in this table one gallon of oil would replace about 15 pounds of coal. Claims made by manufacturers of oil burners range from 100 gallons of oil replacing a ton of coal, (1 gallon equivalent to 20 to 22.4 pounds) to 160 gallons replacing a ton of coal (1 gallon equivalent to 12.5 to 14 pounds of coal).

In making the foregoing comparisons, only the fuel cost has been considered. If the burner is operated by an electric motor the power cost will also require consideration. A ¼ horsepower motor which is the size used in many burners, has a power input of about 300 watts at full load. If the motor were in operation 12 hours each day and the charge for power were 10 cents per kilowat hour, the power cost would be 36 cents per day or about $11.00 per month. On the other hand, if the motor were in operation only six hours per

Winter Service—

—finds a new and valuable duty for Brookins Liquid Measures. Use a Brookins to fill radiators with alcohol. The flexible metal hose can be inserted in the radiator, so that no alcohol slops over and spoils the finish on the hood. The thumb release gives positive control on the amount of alcohol that goes into the radiator, so that none is wasted.

Hold The Confidence Of Your Customers

When a customer asks for Medium oil, don't pick up a container previously filled, and empty it into his crankcase. He can't be sure that he's getting what he asks for —and no customer likes that.

Draw the oil from a tank that is marked "Medium". Let him see it flow into an open Brookins Measure. Then—without bothering about a funnel—carry it to his car, insert the Brookins flexible, metal nozzle in the oil port, and press the thumb valve. That's all.

You won't spill or waste a drop. You only make one trip for a quart or a gallon. You'll give him quicker service. And he'll know that he's getting what he asks for.

Made in copper finish in one, two, four and five quart sizes.

Practically all jobbers carry Brookins Oil Measures in stock. If your jobber doesn't, write us for samples and prices. Write for descriptive matter on Brookins Emergency Gas Can and Brookins Instant Price Charts for Gasoline Pumps.

THE BROOKINS MFG. CO.
342 XENIA AVE. DAYTON, OHIO

Other Brookins Products

Brookins Instant Price Charts

Permanent steel charts, from 14c to 40c, lithographed on both sides and weather-proofed by baked enamel. Each chart shows price per gallon and corresponding quantity prices from one to twenty gallons. Supplied in both even cents and half-cents. Complete price range in each set. Chart fits directly on pump—can be changed instantly. Insures accurate price quotation—eliminates disputes. (Price $7.50 complete).

Brookins Emergency Gas Can

A sturdy two-gallon can, fitted with a flexible metal tube instead of a snout. Carries any distance without spilling. Flexible tube reaches any gasoline intake port without funnel—no spilling, no waste, no danger. An emergency service can that will be appreciated by every customer.

BROOKINS
SERVICE STATION EQUIPMENT

Barrel Flanges That Combine Low Cost and High Quality

Made of pressed steel.

Low welding cost. Proper tolerances insure perfect fit of plugs.

Tight Seal.

Flange flush with barrel shell.

Gasket surface smooth and flat.

Made in ¾", 1½" and 2" sizes.

Standard thread as used by all barrel manufacturers.

Write us for prices.

THE BETTCHER STAMPING & MFG. COMPANY
CLEVELAND, OHIO

day and the power rate were only 3 cents, the power cost would be only about $1.60 per month. In a large number of cases the power costs will probably be found to lie between these two limits.

Because of lack of authentic data, the calculations have necessarily been based on assumptions. Reliable comparative data, applicable to average installations, could probably be obtained better by taking the results of experience in a large number of installations over a period of years, then by laboratory tests. Such data are not at present available.

Real Cost of Heating

The items chargeable to cost of heating include fuel costs, cost of electric power, etc., depreciation of equipment, repairs, interest on investment, space occupied, labor costs, and possibly injury to the house by dirt, dust, smoke, soot, etc. While as a business proposition, a correct estimate of the cost of heating can only be made by taking all such items into account, it is true that for house heating many persons will be interested only in one or more of the items, being content to overlook others or to charge them up in other ways. Thus the result of a comparison of the relative cost of oil and coal heating will lead to various results, depending upon whether all the items are included or not.

If the comparison is made on the basis of fuel and power costs only, no very positive advantage appears at present. If future costs are to be taken into consideration, it is to be remembered that the coal market for domestic fuels, is probably much more stable than the oil market, and that the price of oil is likely to vary through a wide range. It should be remembered that a change of 1 cent a gallon in the price of oil is equivalent in most cases to more than $1 per ton in the price of coal. Then while the user of coal can rest fairly comfortable in the assurance that at worst the cost of his fuel will increase only a little each year, the user of oil must be prepared for large variations in fuel cost, and to find that ultimately oil may be difficult to obtain.

It is undoubtedly true that in the long run, the cost of heating with the more desirable fuel will be higher. At present the cost of heating with hard coal is recognized as being higher than with soft coal, and the hard coal is enabled to command the higher prices because of certain inherent advantages for domestic use. Similarly, oil being a liquid fuel has certain inherent advantages, and some attendant disadvantages, but on the whole, it will probably come to be considered the superior fuel and as oil may be off-set to some extent, by new developments in coal-burning and coal-handling equipment. Such developments stimulated no doubt by the competition due to oil, have already appeared, and are being promoted vigorously.

If a coal burning installation is replaced by an oil-burning one, and fuel costs, power costs, depreciation, repairs, and interest chargeable to the added investment only be considered, it is safe to say that the cost of oil heating will be found greater than that of coal heating.

If, on the other hand, in addition to the costs mentioned in the preceding paragraph, labor costs, including cost of handling and removing ashes (the latter in many cases being paid indirectly in the form of taxes) are taken into consideration, it is probable that the use of oil would show a substantial saving.

In addition to persons interested in comparisons of the kind just given, there will be large numbers of others to whom cost, no matter how calculated, will not be as important unless it be beyond all reason, as other considerations such as convenience, comfort, cleanliness, etc. Such persons would purchase an oil burning equipment largely because they preferred it.

Bureau Of Mines List Shows 565 Refineries

By Special Correspondent

WASHINGTON, Jan. 3.—A list of the oil refineries in the United States, 565 in number, of which 357 operating, 190 shut down but not in any sense of the word abandoned, and eight under construction, to take the place of the list dated Jan. 1, 1922, has been issued by the Bureau of Mines. It shows a daily operating capacity of 2,832,632 barrels, the refineries in operation having a capacity of 2,480,922 and those shut down a capacity of 333,410. Those under construction have a capacity of 18,000 barrels.

These statistics, as nearly accurate as the bureau could obtain, do not purport to be absolutely accurate. All the figures are as of Nov. 1, 1924. Similar lists for Jan. 1, 1923, and Jan. 1, 1924, the bureau, naively said, were not published. That is no information for the industry. The man in charge of the statistics of refinery prior to the incumbent, for reasons not disclosed, seemed not able to keep up the compilation, although for a long time in 1923 and for some time in 1924, the impression was allowed to go out that lists were being prepared.

Data on the 300 most important refineries carried in the list, the introduction to it says, were obtained mainly through the refinery reports made by them to the bureau each month. The data on others were obtained from the questionnaire of January, 1924, from recent correspondence.

No figures pertaining to cracking are included in the list. The bureau asked for them but it said the information was incomplete. It said that perhaps later an effort might be made to obtain and publish cracking facts. The bureau said that doubtless a few omissions had been made as well as a greater number of inclusions of plants that had been junked or dismantled. But the bureau regards the list as fairly accurate and hopes it will be of value to the refining industry, which it said, had so heartily responded to requests for information.

Following are the interesting recapitulations:

Comparative Analysis

Date	Building	Completed	Indicated Daily Capacity, Bbls.
January 1, 1914*	..	176	.....
January 1, 1918	..	267	1,186,155
January 1, 1919	..	289	1,295,115
January 1, 1920	99	373	1,530,565
January 1, 1921	44	415	1,888,800
January 1, 1922	30	479	2,169,150
November 1, 1924	8	547	2,832,532

*From the Bureau of the Census.

Recapitulation by States for November 1, 1924

Daily Capacity in Barrels

	Bldg.	S.D.	Op.	Total	Bldg.	Shut Down	Operating	Total
Arizona	...	...	1	1	.....	.....	500	500
Arkansas	1	8	10	19	5,000	7,550	18,190	30,740
California	1	12	55	68	***	20,400	654,320	674,720
Colorado	1	1	2	4	***	250	1,700	1,950
Georgia	...	...	1	1	.....	.....	4,500	4,500
Illinois	...	6	9	15	.....	13,300	74,000	87,300
Indiana	...	4	2	6	.....	5,500	54,500	60,000
Iowa	...	1	...	1	.....	1,500	.....	1,500
Kansas	...	17	21	38	.....	30,100	110,000	140,100
Kentucky	1	7	9	17	1,000	2,550	13,900	17,450
Louisiana	...	10	16	26	.....	17,445	143,500	160,945
Maryland	...	...	4	4	.....	.....	44,200	44,200
Massachusetts	...	...	3	3	.....	.....	52,500	52,500
Minnesota	...	...	1	1	.....	.....	1,000	1,000
Mississippi	...	...	1	1	.....	.....	200	200
Missouri	...	3	2	5	.....	6,300	13,500	19,800
Montana	1	3	5	9	***	2,250	7,600	9,850
New Jersey	...	2	5	7	.....	7,000	235,000	242,000
New York	...	...	4	4	.....	.....	34,500	34,500
Ohio	...	2	12	14	.....	600	42,950	43,550
Oklahoma	...	43	53	96	.....	116,850	234,900	351,750
Pennsylvania	2	12	48	62	10,200	7,165	126,215	143,580
Rhode Island	...	...	2	2	.....	.....	15,000	15,000
South Carolina	...	...	1	1	.....	.....	10,000	10,000
Tennessee	...	1	...	1	.....	400	.....	400
Texas	1	51	72	124	2,000	87,100	444,680	533,780
Utah	...	...	1	1	.....	.....	4,500	4,500
Virginia	...	...	1	1	.....	.....	5,000	5,000
West Virginia	...	1	5	6	.....	1,200	13,500	14,700
Wyoming	...	6	11	17	.....	5,950	120,567	126,517
TOTALS	8	190	357	555	18,200	333,410	2,480,922	2,832,532

***Not available.

To All Pump Operators

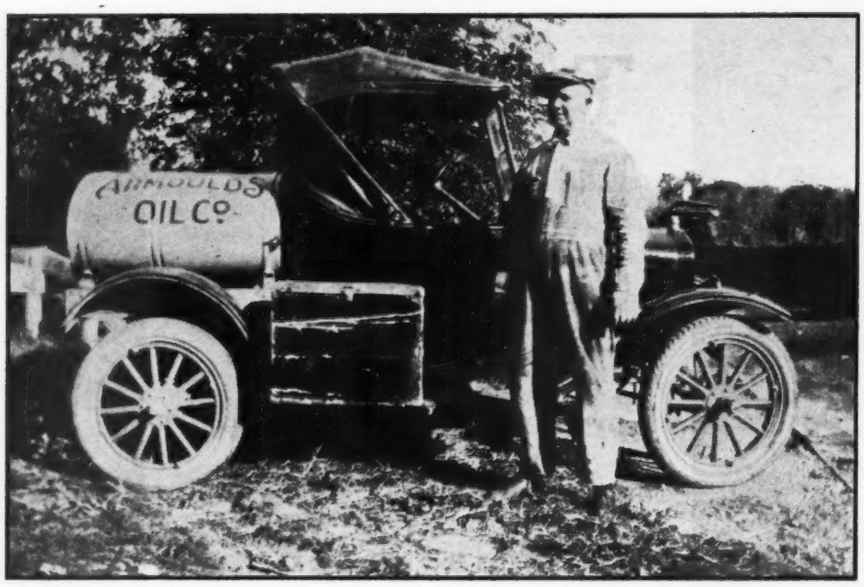
See pages 116 and 117 January 17th Saturday Evening Post. ***There you will find the shortest—and most unique magazine advertisement ever published.*** **See the Fry representative in your territory before you order any more pumps.**

Guarantee Liquid Measure Company
Rochester, Pennsylvania
Dept. P.N.

PHILIP GIES PUMP CO., Ltd.
Canadian Manufacturers and Distributors
KITCHENER, ONTARIO

Made in five and ten gallon capacities—both approved by the Underwriters' Laboratories.

Pump



This little 70-gallon tank now wearing out its fifth Ford chassis is still going strong. Its uniqueness makes it quite a publicity feature in territory where it is known

Truck Tank Wears Out 4 Fords In 10 Years' Service

QUINCY, ILL., Jan. 10

ONE of the oldest and one of the smallest truck tanks built for the oil industry is in service in this vicinity. It is the property of Armoulds' Oil Co. of Hamilton, Ill., but is assigned to duty at the Quincy branch office. It is not a sawed-off wagon tank. It was never any larger than it is now, being a complete truck tank of two compartments, respectively 50 and 70 gallons.

C. H. Armould built his first jobbing plant in 1912 in his home town, Kahoka, Mo. Before that was finished he started building another at the nearby town of La Platte. At each of these stations he placed a horse drawn tank wagon with which to serve the rural trade. When business developed sufficiently around Kahoka to justify another piece of rolling stock, Mr. Armould invested in a motor truck that had a little tank having 50 and 70-gallon compartments. That was more than 10 years ago.

In 1914 horse drawn conveyances were still the rule. There were plenty of automobiles in some sections but not a great many in the country in Missouri, and the most of those were pleasure cars. A truck of any kind for industrial use was something of a curiosity and this was the first tank truck Armoulds customers had ever seen. From that day until now the thing has done the company at least $1,000 worth of good in advertising, Mr. Armould estimates. Meanwhile it has worn out four Ford chassies and is wearing away on the fifth.

The tank first gained special attention as the subject for guessing contests. It is elliptical and its capacity can not be figured by ordinary grammar school arithmetic. School teachers and other persons of higher education used to figure on it to demostrate their mathematical prowess. Emery Lovinger, the man standing by it in the accompanying picture, remembers those incidents. He did not drive it then, nor does he drive it often now, for he is Armould's bulk plant manager here and has only worked for the company a year or so, but he grew up in the vicinity of La Platte and Kahoka.

Mr. Armould says there should be a great many of these little truck tanks scattered about over the country yet, for the Butler Mfg. Co., of Kansas City made quite a number of them at the same time his was turned out there. Probably more of them are being used for stationary storage than on trucks, for the places where such small tank wagons may be used profitably may be rare in this advanced stage of the petroleum marketing industry. The Armould's Oil Co. uses this one in special delivery service nearly every day and it pays well enough that there will be another Ford roadster waiting for it when this one is gone.

Advertising is still the main service to which this tank truck is put. In the first place it is still kept painted and polished like new, and in the autumn it comes in for its favorite use. It is then that some energetic salesman fills it up with Armoulds' high test kerosene and drives into the country where every field has a tractor turning the soil. Presently the salesman finds a farmer out of fuel—or better yet, finds one having trouble with his tractor feul. At this opportune time he introduces his superior quality wares.

Two or three gallons of good tractor fuel delivered in emergencies here and there seldom fails to wed a customer to the company and its goods, Mr. Lovinger explains. So at any time of year when plowing is in progress, the smaller compartment is kept full of premium grade kerosene. When the driver goes out to make a special delivery of anything in the 70-gallon compartment, he is prepared on the return trip to do a little missionary work in favor of a "better tractor fuel."

Oregon Plans To Excel In Taxing Gasoline

CHICAGO, Jan. 11.—Among all the states where gasoline tax is being contemplated by legislators and lobbyists, Oregon is conspicuous. There the motorists are face to face with a 6-cent levy on every gallon. The tax is 3 cents already, and the odd part of the situation is that officials of the Oregon State Motor Association are in favor of the increased levy, contemplating in connection therewith a 50 per cent cut in automobile license fees.

The legislative situation has been discussed thoroughly in Oregon papers and communications to National Petroleum News indicate that the proposed bill is popular. All of the motor associations are not in favor of it. Some members advocate the sale of $1 per year driver's license tax which would net the state about $350,000, it is estimated, but this solution of the situation is not generally accepted as good.

Three directors of the motor association, it is said, have been promised places on the senate's committee on roads and highways and all three of them are advocates of the increased gasoline tax. This committee would have charge of handling the proposed bill and the three association direcctors who are also state senators would be in a position to almost wield the committee.

Governor Pierce of Oregon has not spoken in favor of a 6-cent gasoline tax but he has committed himself as favoring at least a 1 cent increase, and has advocated it for several months. His idea is to build new roads with the additional 1 cent per gallon because all the revenue derived now at the rate of 3 cents a gallon is used in retirement of bonds already sold to build roads.

The gasoline tax in Oregon for the first 11 months of 1924 aggregated $2,661,072.84 according to accounts and it is thought that the year will raise the figure to about $2,850,000.

BIRMINGHAM, ALA., Jan. 11.—The office and warehouse of the Acme Oil Co. of Alabama, which were destroyed by fire last September, causing a loss of between $16,000 and $17,000, have now been rebuilt with brick and tile and operations are back to normal, according to W. N. Benton, president.

The loss was about two-thirds covered by insurance.

They Adjust As They Pump

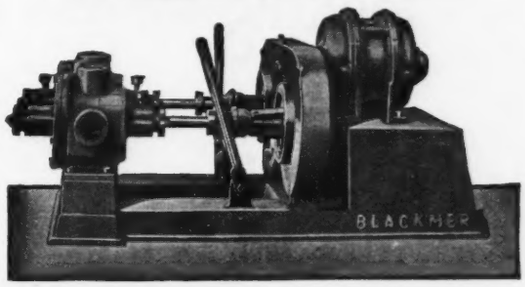
There is a Blackmer Unit to fit any pumping requirement of the Oil Industry. Capacity range from 5 to 500 gallons per minute.

They take up their own wear automatically; maintaining high efficiency after years of service.

Write us about your pumping problems. Our engineers are at your service.

Blackmer Rotary Pump Co.
Petoskey, Michigan

BLACKMER ROTARY PUMPS



FUEL OIL — GAS OIL — KEROSENE — GASOLINE

A Prominent Refiner's Opinion of SPENCER RESPONSIBILITY, RELIABILITY, CHARACTER *and* STANDING

Gentlemen:—In reply to your letter, we have had rather extensive dealings with Spencer Petroleum Co. ever since they have been in business, and have found them to be absolutely first-class and reliable in every respect. Believe their responsibility, character and general standing to be equal to any of the reliable marketers. The writer knew members of this firm when they were with the old Anderson & Gustafson organization, and has done business with them continually, and we are now shipping them several carloads of oil per day.

"Yours truly,—(name on request)"

Spencer growth is the direct result of fair-minded, intelligent and high-principled business dealings.

"Conscientious Oil Marketing Guided by Years of Experience"

SPENCER PETROLEUM CO.

All Petroleum Products

CHICAGO
1331-1333 Peoples Gas Bldg.
Harrison 9630-1-2-3-4

STABILITY SPENCER SERVICE OILS SATISFACTION

KANSAS CITY
700 Orear-Leslie Bldg.
Harrison 6180-81
Long Distance 65

WICHITA FALLS
204 City Nat'l Bk. Bldg.
Phone 3480

TULSA
1039 Kennedy Bldg.
7857
Long Distance 37

DETROIT
743 Book Bldg.
Cadillac 8864

Protect Your Workers

Disrupted working forces reduce the efficiency in any plant. Frequently, they are the result of an infection or skin disease, suffered by some employee who has used germ laden wiping cloths or handled contaminated cutting oil. Ohio, for example, has passed legislation demanding sterilized wipers.

Kleen Kwality Kloths

put sanitation in industrial plants. They are not only clean, but germ-proof; because they are live-steam boiled, bathed in chemicals and baked for 30 minutes. This treatment makes them lintless—a feature appreciated by any machinist.

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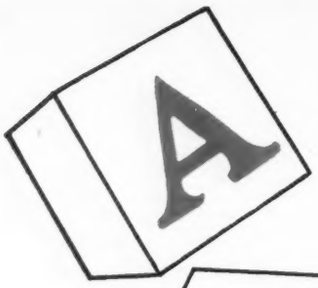

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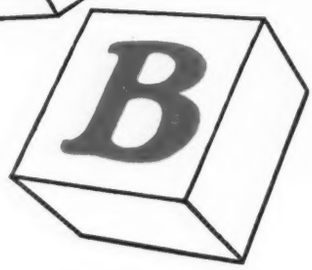

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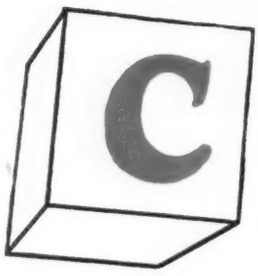

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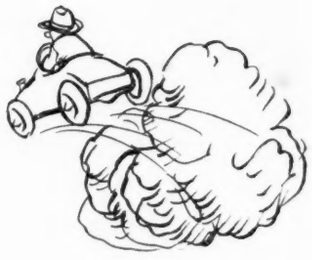

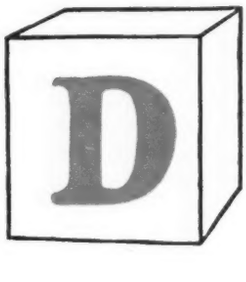

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Report Supports Refiners In Fight Against Merchant Marine Act

By Special Correspondent

WASHINGTON, Jan. 10

ALTHOUGH nominally the Shipping Board has unlimited power to clap section 28 of the merchant marine law into effect, it is believed that that section has become a dead letter. President Coolidge, in his annual message to Congress, said he believed that action under that section should be suspended until Congress could reconsider the entire question in the light of the experience that had been developed since its enactment.

That section of the law says that whenever the Shipping Board is of the opinion that there is an adequacy of American ships to carry the commerce of the country and shall so certify to the Interstate Commerce Commission, the latter shall forbid the railroads to confine the use of their lower export and import rates to traffic that has been hauled or is about to be hauled by such American ships.

When, almost a year ago the Shipping Board made such a certificate Mid-Continent refiners had to come to Washington ere they could force the withdrawal of the certificate. They did that by showing that on between 600,000 and 700,000 tons of refined oils they now send into the overseas trade, enforcement of that part of the law would place them at a disadvantage of from two or three cents a gallon in comparison with the refiners at the Atlantic, Pacific and Gulf coasts.

Three weeks ago the Shipping Board began asking questions about conditions now, with a view it was generally believed, to making another certificate of adequacy. The fact that the president in his message made the suggestion hereinbefore mentioned, has been taken as indicating that the Shipping Board is not in his confidence and that he gave its members no inkling that he would recommend no action until after he had had an opportunity to reconsider the whole question. In view of that stand by him it is regarded as a certainty the Board will not do anything—unless its members are pining for dismissal from their offices.

A few days after the President sent his message to congress the Shipping Board policy received a hard knock from a committee of which Secretary Hoover is chairman which had been appointed by the president to consider how the rail and water transportation systems might be better co-ordinated. It heartily commended the president's recommendation for suspension of action under section 28 until after Congress could reconsider the subject. It based that and other recommendations on a special report made for it on the subject by Stuart Daggett of California.

In his report, Mr. Daggett reviewed the facts brought out last spring when the Shipping Board put section 28 into operation, insofar as it could, and then retraced its steps on account, largely, of the representations made to Congress in behalf of the Mid-Continent refiners.

The Daggett report, however, brought out some new facts interesting to the oil industry on account of the way he brought them into juxtaposition. He showed that of the 40,712,832 tons of goods exported from the United States in the calendar year, 1923, 11,708,872 tons were of petroleum and its products. That tonnage equals the tonnage of grain, coal and coke put together, or grain, lumber and "other exports" put into one total. Grain and lumber, the ordinary man has been led to believe constituted such a large percentage of the exports that other things were hardly worth considering.

Imports of petroleum, however, exceed exports—as the industry knows—the imports amounting in 1923 to 14,120.511 tons, consisting of course, largely of Mexican crude. That equals the tonnage of sugar, molasses, fertilizers and "other imports"—again showing the large percentage of import business that is absorbed by the oil industry.

Of the exports, the Daggett report shows about half, or 20,000.000 tons receive no rail haul but originate at the ports or so near that they are not transported by the railroads.

About 11,100,000 tons of petroleum and its products exported receive no rail haul, the remainder of the total petroleum export of 11.700,000 tons receiving rail haul. The estimates on the amount of petroleum receiving a rail haul vary from 400,000 to something more than 700.000 tons.

The Daggett report, in every particular, supports the declaration of the Mid-Continent refiners that there are no American flag ships available for the transportation, in bulk, of petroleum. The author went into the subject of tanker ownership and control in more detail than the protesting Mid-Continent refiners. He showed that all the tankers, except one, were owned or controlled by the big coastal refiners and that one was engaged in carrying fuel oil from Mexico to Nicaragua for a fruit company.

"Enforcement of section 28," said Mr. Daggett, "would have a disastrous effect" upon the protesting section of the oil industry. He said the only effect of putting the Mid-Continent refiners under section 28 would be to crush them, under the disadvantage of two or three cents per gallon.

Davis Joins Empire As Chief Chemist

TULSA, Jan. 10.—Arthur L. Davis, chief chemist at the Wood River refinery of the Standard Oil Co. of Indiana, will become chief chemist of the Empire Refineries, Inc., Tulsa, Jan. 1, 1925. He will be located at Okmulgee, Oklahoma in charge of control and development work in the plant there and other refineries located at Cushing, Okla., Ponca City, Okla. and Gainsville, Texas.

Mr. Davis has been the national secretary-treasurer of the Alpha Chi Sigma fraternity. a national professional chemical fraternity, for the past two and one half years and will continue in the same capacity moving the office from its present location in Alton to Okmulgee, Oklahoma.

A.O.M.A. Convention Plans Being Perfected

Staff Special

CHICAGO, Jan. 10.—Andrew J. Callaghan, American Oil Corp., Jackson, Mich., president of the American Oil Men's Association, will go to considerable expense to make the annual banquet and ball a brilliant social success, when that organization assembles in convention on March 17, in Kansas City. Mr. Callaghan is supplying the grand prize for a "Ladies' Lottery" which will be the feature of the annual ball following the banquet on the second night of the convention, March 18.

The charactcer of the prize has not been decided. H. C. James, secretary of the A. O. M. A. in Chicago says it will be no less an award than a diamond ring or a handsome wrist watch. Ladies who attend the dance will be given each a lottery ticket and the winner of the prize chosen by lot in some suitable way during the course of the entertainment. In this way the A. O. M. A. officials believe they will improve interest in the social side of the meeting. "Stags" will be in the minority at the banquet and ball.

Mr. James relates that a splendid program is being arranged for the convention which will last three days starting St. Patrick's Day in the Kansas City Athletic Club building. Three special features have been evolved. There will be time set apart on the program for addresses from oil equipment men; there will be a period also for oil burner men, and one luncheon and afternoon session will be given over to the work of state organizations.

Two changes have been made recently in the A. O. M. A. directorate. F. G. Clark, Jr., representing the Fred G. Clark Co., Cleveland, O., has been elected to succeed George L. Bodie, of Cosden Sales Corp., Chicago. L. L. Coryell of Coryell & Son, Lincoln, Neb., has been named to succeed Carl O. Beroth, head of Acme Petroleum Co., Chicago.

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Oil Patents Issued In November

Refining

Whirling Spray Refining

No. 1,516,285, Nov. 18, 1924; Claude Leslie Freeland, Bristow, Okla. Process of and apparatus for refining crude oils. Filed Oct. 10, 1919. Class 196, sub-class 71. Six claims.

In the refining of crude oil this process consists in preliminarily heating the oil, spraying the heated oil at an angle into a closed and unobstructed container, thereby imparting to the spraying oil a whirling movement about an axis so as to separate the low gravity products from the high gravity products as it travels along said axis, and separately collecting the high gravity products assembled at the center of the vortex.

To Recover Filtered Oil

No. 1,515,597, Nov. 18, 1924; Peter P. Hindelage, San Antonio, Tex. Process for clarifying oil. Filed Oct. 17, 1922. Class 196, sub-class 147. Assigned to Standard Fullers Earth Co., Inc., of San Antonio. Two claims.

To lessen waste and recover part of the oil from fuller's earth filter press cake after clarifying the oil, the process comprises treating the case as follows: (1) forcing air therethrough for about 15 minutes under about 15 pounds pressure per square inch at natural temperature, (2) forcing steam therethrough for about 30 minutes at about 70 to 100 pounds pressure per square inch, (3) forcing water therethrough for about 60 minutes under about 40 pounds pessure per square inch, and at about 200 to 212° F. and finally (4) again forcing steam therethrough for about 30 minutes at about 70 to 100 pounds pressure per square inch.

A Spiral Still Scraper

No. 1,515,552, Nov. 11, 1924; Ethurge Cravens, West Tulsa. Still scraper. Filed Feb. 3, 1922. Class 196, sub-class 122. Three claims.

For removal of carbon accumulations from an oil still a scraper is provided which comprises a shaft journaled longitudinally of the still, a plurality of spokes radiating from the shaft, a bar of spiral formation carried by said spokes and extending substantially the full length of the still, a plurality of brackets adjustably mounted at intervals upon said bar, and a plurality of arms each pivoted within a bracket and carrying transversely arranged weighted scraper blades.

Acetylene Motor Fuel

No. 1,514,977. Nov. 11, 1924, Karl P. McElroy, Washington, D. C. Process of making motor fuel. Class 44, sub-class 9. Filed April 5, 1922. One-half assigned to Alfred M. Houghton, Washington, D. C. and one-half assigned to Richard Franchot, Niagara Falls, N.Y. Three claims.

To make a motor fuel there is provided a method wherein acetylene is passed through an acid solution, usually containing mercury, at a temperature of about 70°C. to convert a portion, but not all of it, into acetaldehyde and the mixture of acetaldehyde vapor and acetylene, after drying is directly compressed into liquid form.

An Emerson Patent

No. 1,514,040, Nov. 4, 1924; Victor Lee Emerson, Philadelphia. Apparatus for the conversion of hydrocarbon oil. Class 196, sub-class 104. Filed June 25, 1921. Five Claims.

To efficiently convert hydrocarbon oils into light gravity products, the apparatus comprises a still, a conduit for supplying oil to said still, said still having a base receptacle for the reception of said oil, a preheater connected with said supply conduit, a conduit connecting said preheater with said receptacle a conduit connecting said supply conduit with said receptacle, a pump having a plurality of inlets and outlets, a conduit connecting said receptacle with an inlet of said pump, a conduit connecting an outlet of said pump with said supply conduit, a conduit connecting an inlet of said pump with said supply conduit and valves in said conduits so arranged as to permit said pump to circulate the oil in said receptacle to said preheater and back to said receptacle or withdraw the oil from said receptacle and preheater and eject it through said supply pipe.

Reducing Condensing Pressure

No. 1,514,098. Nov. 4, 1924; Charles S. Palmer, Pittsburgh. Art of treating petroleum oils. Filed July 5, 1917. Class 196, sub-class 59. Assigned to Standard Oil Co. of Indiana. Eleven claims.

To decompose hydrocarbon oils the still is maintained under superatmospheric pressure. In the condenser the pressure is gradually dropped through the passage through the condenser in proportion to the lowered temperature.

Bentonite for Sulfur

No. 1,515,733, November 18, 1924; Roy Cross, Kansas City. Refining material. Filed Dec. 31, 1923. Class 252, sub-class 2. Eight claims.

To better purify hydrocarbon oils, that is, to deordorize, decolorize, and desulphurize, the oil is treated with a refining material consisting in a highly absorbent inorganic material such as, for example, a western clay commercially known as "Bentonite" combined with a metal salt, the latter having an affinity for the sulphur compounds of the hydrocarbons.

Natural Gasoline

Recovery by Charcoal Shower

No. 1,516,166, Nov. 18, 1924· Leo Wallerstein, New York City. Process and apparatus for recovering gasoline from natural gas. Filed April 30, 1919. Class 196, sub-class 8. Assigned to Gasoline Recovery Corp. Six claims.

To remove gasoline from natural gas this process comprises flowing the natural gas in contact with a shower of comminuted absorbent carbon such as used, for example, in gas masks, until the natural gas is substantially freed of its gasoline and then allowing it to escape from such contact, maintaining the carbon shower in the presence of flowing natural gas for a time sufficient to charge fully the first portion of the carbon with gasoline, then cutting off the flow of gas, subjecting the carbon in situ to treatment to carry off the gasoline from the carbon, collecting said gasoline liquid form, and then against flowing natural gas into contact with such carbon.

Production

Calcium Chloride Dehydrating

No. 1,515,093, Nov. 11, 1924; Virgil C. Crites and Kenneth A. Wright, Los Angeles. Process of dehydrating oil. Filed Feb. 4, 1924. Class 196, sub-class 4. Assigned to American Oil Dehydrating Co., of Los Angeles. Nine claims.

To remove water from crude and other oils, the oil is preheated to between 140° F. and 200° F. and then passed through a solution of calcium chloride heated to about 180° F. and having a gravity between 1.35 and 1.6° B. when the water is extracted by the calcium chloride.

Electric Well Heater

No. 1,516,836, Nov. 25, 1924; James E. Williamson, Pittsburgh. Electric well heater. Filed Feb. 23, 1923. Class 219, sub-class 33. One-half assigned to Henry F. Luebbe, Pittsburgh. Eleven claims.

An improved heater adapted to be lowered into oil wells and heated by an electric current generated at the surface comprises a closed hollow casing, a fluid conductor extending through said casing, an electric heating element mounted on said conductor, and means associated with said conductor for vaporizing said fluid on its passage through said conductor, and means for supplying electrical current to said element.

Mechanical Dehydrating

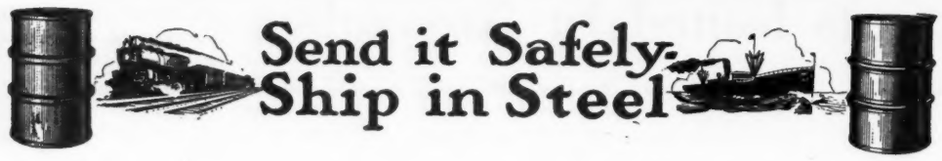
No. 1,514,118, Nov. 24, 1924; John F. Wright, El Dorado, Ark. Oil-treating machine. Filed April 9, 1923. Class 196, sub-class 3. Seven claims.

To mechanically separate water emulsions from oil, this device includes a treating tank, a housing thereon, a propeller in said housing, nozzles adapted to deliver oil and hot water forcibly against the blades of said propeller, an upright tube in said treating tank, a rotatable shaft in said tube, operative connections between the shaft of said propeller and said rotatable shaft, agitating means on said rotatable shaft shaped to drive the liquid into said tank.

To Prevent Caving

No. 1,514,062, Nov. 4, 1924; Robert M. McLain, Fort Worth, Tex. Means for encasing wells. Filed May 9, 1922. Class 166, sub-class 4. One-half assigned to Eugene A. Reilly, Fort Worth. Eight claims.

To guard against caving of the wall of the well there is provided a tubular casing, means to lower the casing into the well, and resilient means carried by said lowering means and adapted during withdrawal of said lowering



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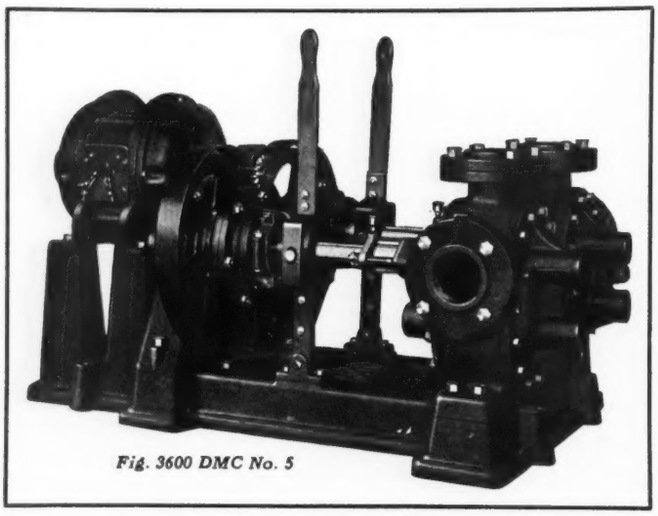

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means, to press the tubular casing into more effective engagement with the sides of the well.

Sleeve for Rotary Drill Pipe

No. 1,516,911, Nov. 25, 1924; Wallace Canfield and Paul R. G. Biedermann, Taft, Cal. Re-enforcing sleeve for rotary drill pipe. Filed June 13, 1923. Class 285, sub-class 197. Three claims.

To prevent twist-offs on the drill pipe there is provided a reinforcement for coupled sections of drill pipe, comprising a pipe section; a threaded coupling exteriorly screwed upon the end of said section; and a sleeve tightly fitted within the coupled end of the pipe section and extending within the pipe beyond the cross plane of the coupling end, said sleeve on its outside being cylindrical and on its inside tapering away from the pipe end.

Oil Recovery With Solvent

No. 1,514,113, Nov. 4, 1924; Milon J. Trumble, Los Angeles. Process for removing values from oil sands. Filed June 5, 1922. Class 196, sub-class 14. Seven claims.

To recover oil from oil bearing sands, the process comprises providing a plurality of storage tanks adapted to contain oil dissolved in a solvent, the first of said tanks containing solvent free from dissolved oil, succeeding tanks containing increasing amounts of oil; circulating the solvent from the tank containing the greatest proportion of oil through a mass of oil sand to mix the solvent with further amounts of oil; delivering the product of said mixture to a still in which the low boiling point fractions of the mixture are vaporized; and delivering at least a portion of the condensing said low boiling fractions condensates so formed to said first tank to replace solvent which has been used therefrom; and thereafter successively washing the oil sand with solvents of successively lower dilution with oil.

Miscellaneous

Wax From Shale

No. 1,513,745, Nov. 4, 1924; David T. Day, Washington, D. C. Process of preparing mineral wax. Class 196, sub-class 14. Filed Jan. 15, 1921. Eight claims.

To obtain from shale a waxy substance that has a melting point of at least 150° F. this process comprises immersing hydrocarbon oil bearing shale containing the wax in an ethyl alcohol bath, subjecting the alcohol and shale to an increased temperature sufficient to boil the alcohol and effect the extraction of the waxy material by the solvent action of the alcohol alone, separating the alcohol and matter extracted thereby from the shale, cooling the resultant liquid material to effect the solidification of the wax, separating the major portion of the alcohol from the extracted material, and further removing any remaining alcohol by subjecting the extracted waxy material to a temperature sufficient to distill off any of the alcohol remaining therein, the solvent alcohol being characterized by its ability to substantially completely separate from the paraffin-like wax material, when the latter cools and to thus be thereafter immediately reusable on fresh shale.

A New Liquid Fuel

No. 1,516,757, Nov. 25, 1924; Harry M. Weber, Caldwell, N. J. Fuel mixture containing oxidized petroleum products. Filed April 13, 1923. Class 44, sub-class 9. Assigned to Ellis-Foster Co. Eight claims.

To provide a liquid fuel a mixture is provided which contains products of partial oxidation of petroleum and especially cracked and oxidized petroleum material with other combustible liquids such as benzol, alcohol, acetone, ether and the like.

Oil Recovery From Tar Sands

No. 1,514,162, Nov. 4, 1924; Alexander F. Kelsey, Edmonton, Alberta, Canada. Apparatus for recovering bitumen and crude oil from tar sand, oil sand, bituminous sandstone, shales and the like. Filed July 18, 1921. Class 196, sub-class 14. Five claims.

To recover bitumen and oil from sand shale and the like without the use of any solvents, the apparatus comprises a separating container having an overflow conduit, a waste conduit connected to the bottom of the said container, means for feeding material into the side of the container, a screen in the lower part of the container, means for heating the material in the container, means for maintaining a flow of water through the container, and means for feeding material from the waste conduit, the said means comprising a pivoted shutter, a compartment and valved conduit leading from the shutter to the said compartment.

SALEM, O., Jan. 10.—The annual meeting of the Ohio salesmen and agents of the Freedom Oil Works Co., was held on Dec. 9 at the Fort Steuben Hotel, Steubenville, O. Percy L. Craig, president, Earl M. Craig, his son, and F. A. Paisley, sales manager, were speakers at the meeting.

LOS ANGELES, Jan. 10.—Don Cameron, who was for years with the Oil Well Supply Company, and was for the last five years in charge of the metropolitan office of the Continental Supply Co. in New York, has gone into business on his own account at 909 Central Building, this city.

Industrial Notes

The Holt Manufacturing Co., Peoria, Ill., recently put on the market a new five-ton Caterpillar tractor, designed for use in the medium power field. Its outstanding feature is unit construction, consisting of three units, the engine, transmission and track units forming the complete tractor. The new model was exhibited at the recent Chicago road show.

The Holt company has appointed Zach Johnson, Pasadena, Md., as its distributor in Maryland, excepting in Garrett, Allegany and Washington counties, and the Brockway Motor Truck Co., Utica, N. Y., as distributor in central and northeastern New York.

* * *

The Austin Co., Cleveland, O., engineers and builders, is now placing orders for materials to cover 1925 requirements. It maintains at its Cleveland, Philadelphia and Chicago store yards large stocks of structural steel in shapes, plates and bars; steel sash, lumber, putty, and glass. At its 13 branch organizations in the country, it will purchase locally quantities of materials used in industrial building.

* * *

Hall-Daw Mfg. Co., Buffalo, N. Y., is offering an air hose nozzle which contains a tire pressure gauge. The nozzle is called the "Korectair." It registers from 15 to 80 pounds. It may be attached to any hose.

* * *

Foamite-Childs Corp., Utica, N. Y., has off the press a 24-page illustrated booklet entitled "Correct Protection Against Fire," which is a treatise on fire protection for all sorts of risks and which lays particular stress on the fact that the greater portion of fire losses could be prevented by prompt use of the proper first-aid fire-fighting devices. A novel feature of the booklet is a chart in which are defined the classifications of fires made by the Underwriters' Laboratories and proper safeguards for each class of fire. Copies of the booklet may be had free by writing to the above company.

* * *

A. Y. McDonald Manufacturing Co., Dubuque, Ia., has added an improved five-gallon funnel to its line, the features of which, the company claims, are its exceptional strength and the fine set in the bowl to prevent swirling of the liquid, and that by eliminating centrifugal motion, it will discharge five gallons of liquid in record time. The funnel is of heavy galvanized sheet steel.

* * *

Brown Instrument Co., Philadelphia has issued its catalog No. 32 entitled "Measuring Carbon Dioxide Electrically." In the catalog are described the meters for measuring the carbon dioxide in flue gases, and recording instruments together with data of interest to power plant operators and combustion engineers.

* * *

Botfield Refractories Co., Philadelphia, has published a booklet containing suggestions on fire brick construction, including proper method of laying fire brick, coating furnace walls, method of filling up holes inexpensively, and other hints.

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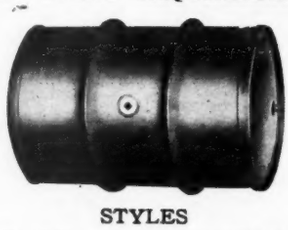

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Proper Method For Determining Gasoline Vapor Pressure Being Sought

By H. L. Shoemaker
Standard Oil Co. of New Jersey

Delivered at American Petroleum Institute Meeting, Fort Worth, Dec. 11

THE tendency of an inflammable liquid to give off vapor exists at all times and the measure of this tendency is described as the "vapor tension" of that liquid. This tendency to vaporize, i.e., the true value of vapor tension, is independent of any condition except the temperature of the liquid when the vapor tension is measured.

Considering two different liquids at the same temperature, the amount of vapor which will be thrown off into the air above is directly proportional to the vapor tension; i.e., if the vapor tension of one liquid (expressed in pounds pressure) is two, it will be found that twice as much vapor exists in the air above it as does exist above the liquid having a vapor tension of one pound.

It is a well known scientific fact that the vapors of any inflammable liquid must exist in a certain minimum proportion in air before the vapor-air mixture can be ignited or exploded. Since the true vapor tension of a liquid bears a definite and known relation to the amount of vapor which exists above the liquid, it is evident that vapor tension actually serves to show whether an explosive or ignitable mixture may be formed when the liquid investigated is at the temperature in question.

Simple Method Sought

The facts stated above have long been known, but the usual scientific method for the determination of true vapor tension is impracticable as a field routine test. Hence, for the purpose of regulating shipments of gasoline in tank cars, a simpler method of determining the vapor tension was devised.

It was quite important that the Bureau of Explosives, in their single purpose of trying to safeguard the transportation of inflammable liquids, should endeavor to try and ascertain a line of demarcation between gasoline that be considered as "dangerous commodities" and those presenting a materially less transportation and handling hazard.

After endeavoring to ascertain the best information then available, by means of co-operation with various committees, associations and individual companies manufacturing and shipping gasolines of various character, as far back as 1911, it was decided that vapor tension constituted, as has been above noted, the best measure of the relative and inherent "dangerousness" of any gasoline.

It might be remarked that in view of the size of the industry and the fact that there was not at that time any central agency, such as the American Petroleum Institute, to discuss these things with and to ascertain the viewpoint of the entire industry, progress in formulating definite rules was necessarily slow.

The accompanying paper presents to the oil industry for the first time so far as we know, a clear statement of the whole question of testing vapor tension of gasoline. It tells what vapor tension is and what bearing it has on the shipment of highly volatile gasoline.

While the natural gasoline people and their engineers for a long time have been working hard and intelligently on the problem of devising a method for testing vapor tension that will satisfy the Bureau of Explosives on the ground of safety, and at the same time not penalize the manufacturers and shippers of natural gasoline, the industry in general has been more or less in the dark as to what the matter was all about.

Here it is explained. Mr. Shoemaker urges upon oil companies who up to date have taken little interest and little part in working out a satisfactory solution to the problem to lend their efforts toward finding the answer.—Editor.

It was finally agreed that 10 pounds per square inch at 100° F., designated at "vapor tension" should be the dividing line between gasolines considered in the classification of "dangerous" and those "less dangerous." It was also written in the rules that gasolines having a vapor tension above 10 pounds per square inch at 100° F., should be shipped in insulated tank cars.

This figure of 10 pounds per square inch vapor tension was determined somewhat arbitrarily, it being felt that it was of the greatest importance to find the vapor tension at which, when a dome cover was suddenly opened on a tank car, the liquid would not boil over and be ejected from the open dome.

It was believed then that if the gasoline in a tank car were under 10 pounds or less vapor pressure at 100° F., on sudden removal of the dome cover the liquid would not boil and be ejected from the car.

It is interesting to note at this point that the conclusions first drawn from the data then available have, in the light of later investigation and research of the Bureau of Mines and the special technical committee of the American Petroleum Institute, been somewhat modified. In connection with later discussions to reduce the 10 pound vapor tension limit to 8 pounds in order to provide greater safety in transportation, as advocatd by the Bureau of Explosives in 1921, both the special technical committee of the American Petroleum Institute and the Bureau of Mines, in recommending that the 10-pound vapor tension limit be continued, stated in substance that no difference in hazard is obtained by reducing the vapor pressure limit from 10 pounds to 8 pounds in standard single shell cars, and in order to comply with this proposed reduction a weathering loss of approximately 10 to 12.5 per cent of the gasoline would be entailed, thus indicating a tremendous wastage of a valuable commodity and meaning probably the difference between profit and loss for many plants.

8-Pound Limit Abandoned

It will be recalled that this proposal was later definitely abandoned. Having, however, originally specified the line of demarcation in the shipment of gasoline as 10-pound vapor tension at 100° F., it then remained for the Bureau of Explosives to suggest a method by which this vapor tension, so-called, could be determined in the field.

It should be stated here that the method in common usage and described as "the determination of vapor tension" bears no relation whatever to the scientific value or actual vapor tension of the liquid examined, but is purely an arbitrary method which it was felt could be carried out practically as a field investigation. In this respect the nomenclature of "vapor tension" is misleading.

The method of measuring vapor tension prescribed by the bureau and today found in Bureau of Explosives Circular MCL No 147 is well known to all. The standard vapor tension bomb is filled with the liquid to be tested to 90 per cent of its capacity.

The bomb and its contents are heated to the temperature at which the deter-

mination is to be made (100° F. to 90° F. from Nov. 1 to March 1), and the pressure within the bomb is observed. In order to decrease the error, due to the expansion of the air in the space above the liquid, this space is momentarily vented to the atmosphere when the temperature of the gasoline reaches 70° F.

Corrected to Initial Temperature

A correction of pressure figures so obtained is made according to the initial temperature of the gasoline, this correction being in the form of a deduction from the observed pressure.

General usage by the industry and I. C. C. requirements soon established the method and the results indicated by it were accepted by the inspectors of the Bureau of Explosives, the manufacturers of gasoline and interested carriers in connection with the rail shipment of gasolines.

In May, 1921, the Interstate Commerce Commission, at the suggestion of the Bureau of Explosives, amended the then existing regulations for the transportation of explosives by freight, and among various changes suggested, it was advocated that the method of determining vapor tension then in use, and just described above, should be modified.

It was also suggested by the Bureau of Explosives at this time, and included in the commission's amended regulations, that the vapor tension limit of 10 pounds for material shipped in naked cars should be lowered to 8 pounds. These suggestions regarding changes in existing rules were made by the Bureau of Explosives, following close upon the Memphis accident, which was claimed to have occurred with a gasoline blend having a vapor pressure of 7 pounds.

Accidents Due to Carelessness

The actual facts as regards the Memphis accident are well known and need not be repeated here, except to say that carelessness and disregard of common sense cannot be corrected by any set of rules or prescribed methods.

The Bureau of Explosives suggested that in place of the standard method of determining vapor tension, a new method be used in which the standard bomb should be filled to 90 per cent of capacity as before, but the pressure be read at 100° F. throughout the year. applying a correction factor to the observed pressure at 100° F. whenever the temperature of the gasoline was less than 70° F., this correction factor amounting to 1.5 pound per degree of difference between temperature of the gasoline and 70° F.

It will be noted that the principal difference between the old method and the suggested method was primarily that the venting at 70° F. was eliminated, it being felt that experience had demonstrated that it was almost impossible to secure uniform venting, which in turn affected the accuracy of the observed pressure.

It was also argued that some of the lighter components of a gasoline might be vaporized below 70° F., and the vapors thus formed would escape when the relief valve was opened to vent the expanded air at 70° F.

The claim was also made that the proposed method was much simpler and it was believed would tend to give more uniform results and a truer indication of the internal pressure exerted by the product when in a tank car.

At a hearing before the I. C. C. in June, 1921, to consider various changes in the "Regulations for the Transportation of Explosives by Freight," this change of method was discussed by representatives of the oil industry, acting through the American Petroleum Institute, and it was agreed at that time that further consideration of action upon this change of method would be deferred until committee of technical experts of the industry could make an experimental study to determine what, if any, change in method of measuring vapor tension was desirable.

Pursuant to the agreement then made with the commission, the American Petroleum Institute appointed a special technical committee. The Bureau of Mines was directed to make an independent study of this problem and asked to present their conclusions to the commission.

Extensive Tests Made

In January, 1922, after six months of exhaustive study and experimental work, the final report of the special committee was presented by the institute to the commission. This report gave the conclusions of hundreds of tests, and the entire industry was represented in the compilation of same.

Approximately 1,000 tests were made in the Mid-Continent field alone from practically every district on various gasolines. The National Petroleum Association, the Western Petroleum Refiners Association, the Natural Gas Association, and the Association of Natural Gasoline Manufacturers were all represented in this work, and these organizations were in thorough agreement with the conclusions reached.

It is also interesting to note that the Bureau of Mines, who conducted their investigations to a large measure independently, agreed with the conclusions reached by the experts of the industry.

Briefly, these conclusions were: that while the new method might be more simple than the old method it was definitely determined that the correction factor of 1.5 pounds per degree is so inaccurate as to be impossible of application. It also found and recorded a wide variation between results obtained under the proposed and the old method.

It was also brought out that substantially all the accidents which have occured in the shipment of casing-head or natural gas gasoline have been directly traceable to instances where the existing regulations have been violated, one of the principal causes of accidents being carelessness in the removal of dome covers of tank cars before properly venting and relieving internal pressure.

In considering this question of method at that time, there was developed an entirely new method, suggested by Dr. R. P. Anderson, which it was felt had sufficient merit to justify its consideration. It was recommended by the industry that the Anderson method, as well as any other method that might be developed, be thoroughly investigated and that pending such complete investigation the then existing method of taking vapor tension should be kept in use.

It was further submitted that since a correct and accurate method of determining vapor pressure is fundamental to the entire theory and practice of developing regulations for the safe transportation of natural gas gasoline, the first and logical step is therefore to find a correct method.

The Anderson Method

The Anderson method may be briefly described as follows: The apparatus employed was a modification of the standard bomb in such a manner as to permit of securing vapor space in the bomb free from air without losing any of the volatile constituents of the gasoline.

A ¼-inch connection was made near the bottom of the bomb and a ¼-inch pipe extended up along the side of the bomb, and a cup and ¼-inch needle valve attached to same. The bomb is filled to capacity with the needle valve open, the gauge inserted, and the needle valve closed.

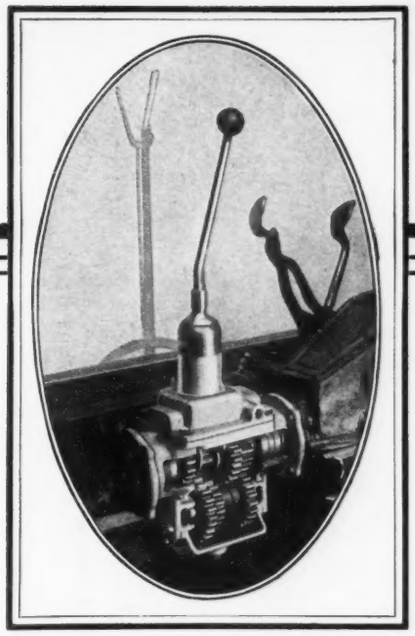
The bomb is then lowered into the water at the proper temperature and as pressure is developed the needle valve is opened and the cup allowed to fill with gasoline from the bomb.

The volume of the cup is about one-tenth of the volume of the bomb. Later, on account of the time element required to heat the gasoline sample in the bomb to a uniform temperature without shaking, the form of apparatus was further modified to permit of conveniently mild agitation.

More Accuracy Expected

It was felt that this method and apparatus would be more accurate than the ordinary method, in view of the fact that a means for agitating the liquid is provided which more clearly resmbles actual conditions in a tank car; and since no air is trapped above the gasoline; hence, pressure due to expanded air in the apparatus is thus eliminated and the obeserved pressure is thus more nearly the vapor pressure of the material under examination.

The Anderson method will give the same pressure as that developed in a tank car at any particular temperature when the space above the gasoline in



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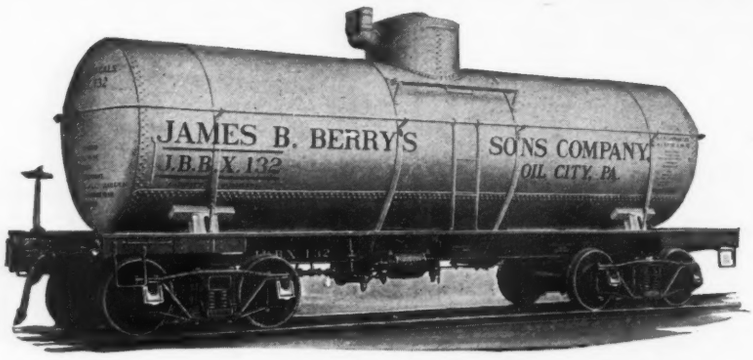

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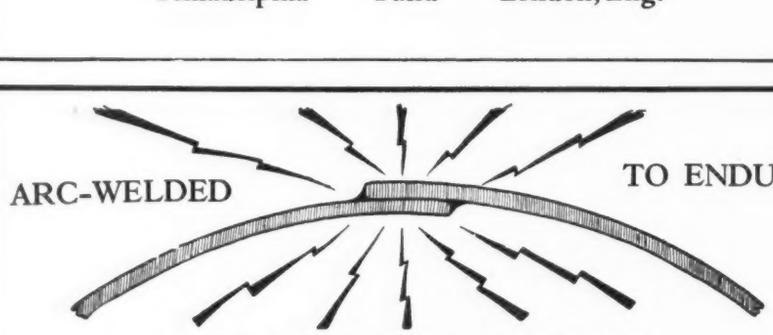

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the tank car contains only gasoline vapor, a condition which obtains when a car is loaded with gasoline at its initial boiling temperature or when all of the air has been eliminated through the safety valve as pressure is built up through rise in temperature after loading.

It might be noted, in general, that as gasoline becomes wilder in nature and more dangerous to ship, the amount of air in the space above the gasoline in the car becomes less, and in the case of gasolines that are actually boiling as they are loaded into the car there is no air whatever.

It is thus evident that as the wildness approaches the limit set for shipment under prescribed conditions the pressure developed in a car at a certain temperature approaches the true vapor pressure at the same temperature, and consequently the true vapor pressure is the best criterion of the fitness of the gasoline for shipment under these conditions.

Companies' Experiences Differ

Many companies who have made extensive tests report consistently higher results when using the Anderson apparatus, whereas the conclusions of other observers indicate that the Anderson apparatus gives slightly lower results.

Also some companies report that the Anderson apparatus gives more accurate results, and other companies give a difference of opinion among their own experts as to which apparatus is the more accurate and gives the most concordant results.

At a meeting of the special technical committee of the institute held in Chicago in July, 1924, results and conclusions up to that time were thoroughly discussed. It might also be mentioned that recently the Association of Natural Gasoline Manufacturers have offered an association prize of $500 to any individual who develops a satisfactory apparatus for measuring vapor tension, that shall be deemed an improvement over ary apparatus in use to date, this being done to promote greater interest in this matter, and with the hope that the operating men directly engaged in this work may be encouraged to participate in the practical working out of these problems.

Progress Not Sufficient

The progress and conclusions up to July, 1924, indicated clearly that the test data was not sufficient to draw any definite conclusions as to the relationship between the two methods, nor is the data sufficient to apply temperature correction to the Anderson machine.

The two separate features to be considered are:

1st—That the most accurate apparatus be selected.

2nd—That the method of operation of the chosen apparatus be such that the product shipped shall be a safe one.

It is important also that if the method of testing is changed the quality of the

product shipped today as safe shall not be changed.

Therefore, it was agreed in July, 1924, that co-operation be continued between the American Petroleum Institute and the Bureau of Explosives, and that further study of this entire question be carried out by a commission consisting of one representative from each of the following organizations:

Bureau of explosives.
Bureau of Mines.
Association of Natural Gasoline Manufacturers.
American Petroleum Institute.

This commission to work under the general direction of the American Petroleum Institute and to make recommendations as to the best practical apparatus for determining vapor tension and how this apparatus shall be operated, also to make recommendations as to what the upper limit of vapor tension, as determined by the method chosen, shall be for shipments in naked and insulated tank cars.

At a further meeting held in September, 1924, in order that the above commission might function along the same lines in all parts of the country the territory in which natural gasoline is manufactured was divided into four regions; namely, Eastern, Central and Rocky Mountain, Gulf Coast and Western, and regional chairmen were appointed in each district who would be responsible for making all tests in their particular region.

It was further agreed that all tests on any particular gasoline should be made in triplicate, with both the present and the Anderson type of apparatus. Further, various specific instructions were developed as regards the methods of procedure in using both forms of apparatus to make sure that all parties would follow the same method in conducting tests, and the necessary number of standardized Anderson and Bureau of Explosives instruments were especially made and distributed to each regional chairman.

The results of these tests to date with all parties using the standardized apparatus and the same method of procedure are hardly sufficient to draw any general conclusions. It is interesting to note, however, that the Mid-Continent region report that the Anderson apparatus registers consistently higher results than the Bureau method, these figures ranging from one to eleven pounds higher for gasoline lines from 81° to 101½°, A. P. I. Results of the Eastern region test to date also indicate the Anderson apparatus to show higher results than the Bureau apparatus. Results from the Gulf Coast and Western regions will not be available until the end of January for discussion.

LOS ANGELES, Jan. 10.—M. H. Whittier, president of the Belridge Oil Co., which operates in the San Joaquin valley fields of this state, has gone to Miami, Fla., to rest for a few weeks.

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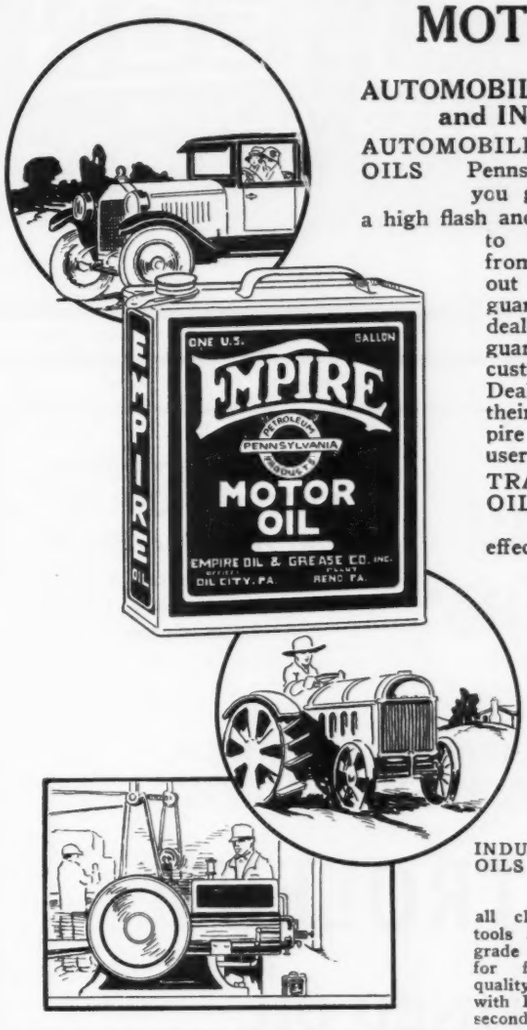

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Tool Company Formed In Fort Worth

By Special Correspondent

FORT WORTH, Jan. 12.—Manufacture of a new type of underreamer and a hinge tool wrench liner in Fort Worth will begin in a short time, according to announcement made following the organization of the Worth Tool Co. this week. J. E. Morgan is the inventor of the tools, which have been previously manufactured at Bristow, Okla., and the demand has exceeded the capacity of the present manufacturing plant to such an extent that the new company, and the expansion in Fort Worth was decided upon. Morgan has interested a number of operators in the company, which is capitalized at $60,000.

Directors selected this week were: J. D. Collett, R. O. Dulaney, F. D. Bostaph, J. R. McCoy, George T. Fuller, L. F. Ladd and J. E. Morgan.

The patents are held jointly by Morgan and J. R. McCoy, former Oklahoma banker. Final patents have just been granted.

Commission Loses Point In Town Drilling Fight

By Special Correspondent

FORT WORTH, Jan. 12.—The Railroad Commission of Texas has lost one point in its fight to curb town-lot drilling inside the Wortham townsite when a district court at Groesbeck gave interests headed by T. L. Bass an injunction preventing the enforcement of Rule 37 which controlled this case.

Rule 37 is that one which prevents drilling within 150 feet of a property line, except by permission of the Commission or its Oil & Gas Division. Under this rule the Commission expected to limit the wells to one to a city block on the Wortham townsite. Interests headed by T. L. Bass succeeded in successfully attacking this rule at Powell in the drilling of a lease close to the water edge at Powell.

Several cases under this rule are now up on appeal—the Commission having won a case in the district court of Seguin near the Luling field, only a couple of weeks ago. The Commission is hopeful of getting a favorable ruling from a higher court in the latter case, now on appeal, and legally establishing the rule throughout the state.

S. O. Reopens Toledo Plant

CLEVELAND, Jan. 10.—The Standard Oil Co. of Ohio is resuming operations at its Toledo refinery which was shut down last July. Building up of the working force was started a month ago and operations are being increased as fast as the force can be reconstructed. The two Cleveland plants of the company are operating at a capacity rate.

ON THE LAZY BENCH

Addenda to "Shoo Fly"

A working girl was dressing tools upon
a standard rig;
Her feet were soft and tender but her
hands were hard and big.
She he't the bits and spread 'em out and
shoveled in the coal,
And tried her best to do her bit to help
and make the hole.
She throwed the wrenches right and left
and grabbed the forgy jack,
Put up the beam, set up the screw and
then hooked back the slack;
Then started for the boiler when she
heard the driller shout,
And as she came back up the walk she
bawled that driller out:
"I've done my work the best I could and
tried to do my bit,
And if you do not like my gait I'll take my
pail and quit.
I've kept the boiler poppin' off and done
your work to boot,
But I will not kick that engine off because
'twould hurt my foot."

—Bridgeport Driller.

◈ ◈ ◈

A Rogues' Gallery

An elderly man of ultraconvivial habits, but withal learned and bookish, was hailed before the bar of justice in a country town.

"Ye're charged with bein' drunk and disorderly," snapped the magistrate. "Have ye anything to say why sentence should not be pronounced?"

"Man's inhumanity to man makes countless thousands mourn," began the prisoner, in a flight of oratory. "I am not so debased as Poe, so profligate as Byron, so ungrateful as Keats, so intemperate as Burns, so timid as Tennyson, so vulgar as Shakespeare, so—"

"That'll do, that'll do," interrupted the magistrate. "Ninety days. And, officer, take down that list of names he mentioned and round 'em up. I think they're as bad as he is."

—Doherty News

◈ ◈ ◈

Must Have

"Shay, didn't we—hic!—didn't we meet once in Wyoming?"

"Naw, I never been in Wyoming."

"Shawl right. I ain't never been there either. Mush—hic!—mush a been a couple other fellows!"

—The Booster

◈ ◈ ◈

Selling Talk

Ardent Wooer (a commercial traveler)—"My love for you, Winnie darling, surpasses anything else that can be offered in that particular line."

—Marland Service Man

First party, discussing neighbors: Old man H.... dropped in to see me yesterday. Said he was on his way to buy some pretzels.

Second party: You must be living in a German neighborhood.

First party: Oh, there's a reason for pretzels. Man south of me has 600 bottles of beer, and Lord knows how much wine. Man north of me the same.

Second party: Funny thing—my great-grandfather, my grand-father and my father's three brothers were all in the brewery business, and my father was a cooper. Yet, I haven't a drop in my house.

Stenographer, interrupting: Why, Mr. F.... you haven't drunk it all already, have you?

—Fleckenstein Visible Gasoline Co.

◈ ◈ ◈

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"Owner likes Maracaibo so well," says a contributor, "that he is willing to let his health leave town on him and stay there himself. His health being out of town, he will be unable to run his 'pension' all alone, so he is looking for a buyer."

◈ ◈ ◈

Pa's Fatal Error

Johnnie (at poultry show) Let's stay until they take the animals out.

Mother: They don't let them out, Johnnie.

Johnnie: Yes, mother, last night dad told Uncle Bill they would wait after the show and pick up a couple of chickens.

—Booster, Pacific Gasoline Co.

◈ ◈ ◈

Origin of the Bagpipes

The invention of the harp was due to an accident, we read. On the other hand the inventor of the bagpipes was a Highland cottager who got the idea through stepping on a cat.

—Marland Service Man

◈ ◈ ◈

A Long Story

Bones—"What did your wife say about you're being out so late the other night?"

Jones—"Don't ask me yet. When she gets through with the subject, I'll condense it for you."

—Bottles

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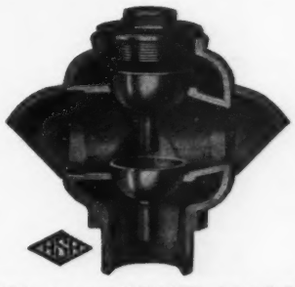

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A double acting vent valve that permits free flow of air to tank as contents are withdrawn and expulsion of air as tank is filled. Poppets have ground seats insuring an air tight tank, Valves have wire mesh screens to prevent back fire; any pressure or vacuum can be maintained.

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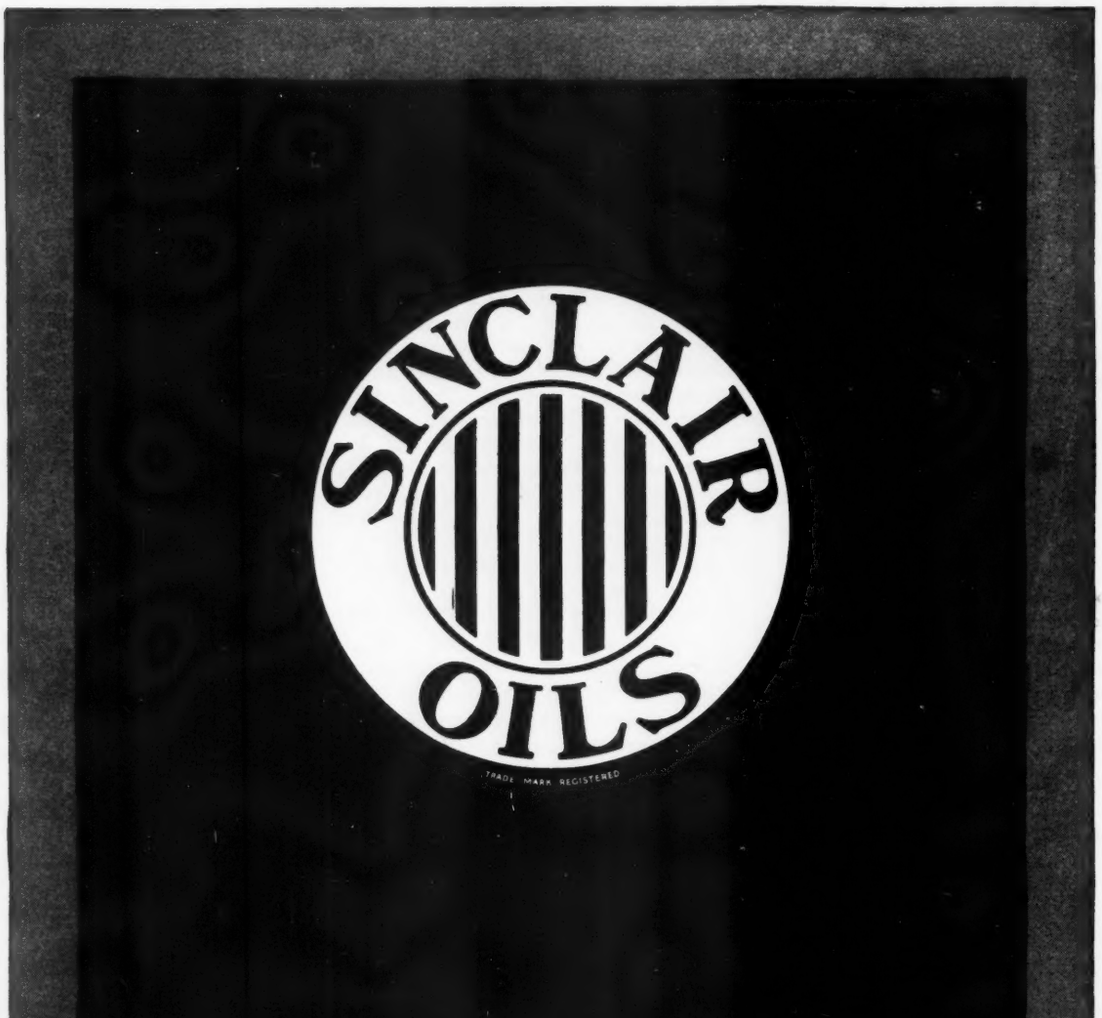

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CUSHING, OKLAHOMA
MUSKOGEE. OKLAHOMA
HOUSTON, TEXAS
WELLSVILLE, N. Y.
PHILADELPHIA, PA.
(under construction)

SINCLAIR OILS

REFINERY-TANK WAGON MARKETS

Mid-Continent Gasoline Markets Strengthened by Exporters

Staff Special
TULSA, Jan. 10

RECURRENCE of export activity throughout the Mid-Continent field has aided the gasoline market appreciably during the last week. Prices have recovered much of the ground which was lost during the recent extreme cold weather.

Fuel oils have advanced fractionally again, reaching a higher level than has been reached by Group 3 fuel oil at any time since 1922. In some upward swings in 1923 and 1924 fuel sold as high as $1.30 per barrel but none has sold in the open market at a higher price since August, 1922.

Kerosene has been stimulated somewhat by an export order and curtailment of current production. Distillates have been easier during the week on account of milder weather.

While high gravity grades have led the advance in the gasoline market there has been a substantial improvement in the tone of the market for U. S. Motor as well. Domestic inquiries have been more brisk and refiners are tending to look forward to higher raw material prices and try to hold their gasoline.

Export Activity

When exporters entered the market they found no surplus of 64-66, 375 end point gasoline in Oklahoma and only a moderate amount available for early shipment in north Texas. They began longer than a week ago, as mentioned in these columns, to buy at 10 to 10¼ cents per gallon. Early purchases caused a tightening of the market and this week exporters have been forced to pay 10½ cents per gallon.

With the Atlantic Refining Co., Sinclair Refining Co. and Carson Petroleum Co. buying gasoline for export it appears likely today that a larger part of the available production of 64-66, 375 end point goods in the field has been obligated. Some material has been bought for delivery in February and reports today are that exporters are offering more for the February gasoline than for that which is to be delivered this month.

The export buying has been well distributed through the field. Competing for gasoline the exporters have canvassed the field carefully and appear to have given nearly every refiner an opportunity to sell. The buying has been centered in Texas because of the ability and willingness of refiners there to make the light grades.

One exporter talked to a number of refiners in the field yesterday and today about U. S. Motor gasoline. The buyer told refiners that he was prepared to pay 7½ cents per gallon if they cared to clean up any surplus they might have. No refiners were willing to sell at that price although some sales had been made to domestic purchasers at that figure on Jan. 5.

Jobbers More Interested

During the holidays jobbers could not be interested in gasoline at any price. But this week they have been inquiring in a more lively manner and refiners are generally well satisfied with the volume of business they have been able to write.

The domestic buyers are not placing large orders and are generally not asking for quotations on futures. For the most part they are confining their purchases to one to five car lots for prompt shipment. The buying appears to be normal winter demand and not to be dictated by any desire to store against future market advances.

Refiners today are demanding 8 to 8¼ cents per gallon on U. S. Motor for immediate delivery. Several have announced that they do not care to sell any for future delivery on account of the crude situation. Brokers appear unable to pick up any except stray cars or goods in transit at 7¾ cents per gallon.

The crude market is giving refiners more and more concern. Refiners are trying desperately to hold what connections they have and to buy more crude wherever they can obtain it. The decline in Oklahoma production in recent weeks has cut off the source of supply which many were formerly using.

In Arkansas one agency posted an advance of 25 cents per barrel on crude in one field this week retroactive to Dec. 29. The new posting was made to compete with Gulf coast agencies which were paying a price above the market.

In the northwestern portion of Group 3 refiners have been scrambling for crude and are reported to be seeking contracts over extended periods at premiums above the present schedule of prices generally paid, which is itself higher than the Prairie Oil & Gas Co. posting. The crude in this district, of course, is much higher in gasoline content than the average.

One outstanding Independent in Oklahoma is reported to be seeking to line up 10,000 barrels of additional crude per day. The Pierce Petroleum Corp. in a recent move to get more crude has purchased a controlling interest in the Consolidated Pipe Line Co. which has a gathering system radiating from Tulsa. One of the large Independents who has considerable crude production of its own is known to be seeking additional oil.

In north Texas the spot market for crude is considerably above the posted price. Refiners seeking oil from day to day without being protected by contracts are paying as high as 30 cents per barrel premium in some instances. Several Kansas refiners are reported to be in a particularly tight place with respect to their supply of raw material.

Resisting Premiums

For the most part refiners are trying diligently to keep from paying premiums. They are searching for oil but realize that by bidding up premiums they might force an increase in the price of crude. Although heavy oils are more or less temporarily high, gasoline is still low and cannot be expected to move rapidly enough in the middle of winter to keep operations on a profitable basis with increasing crude costs.

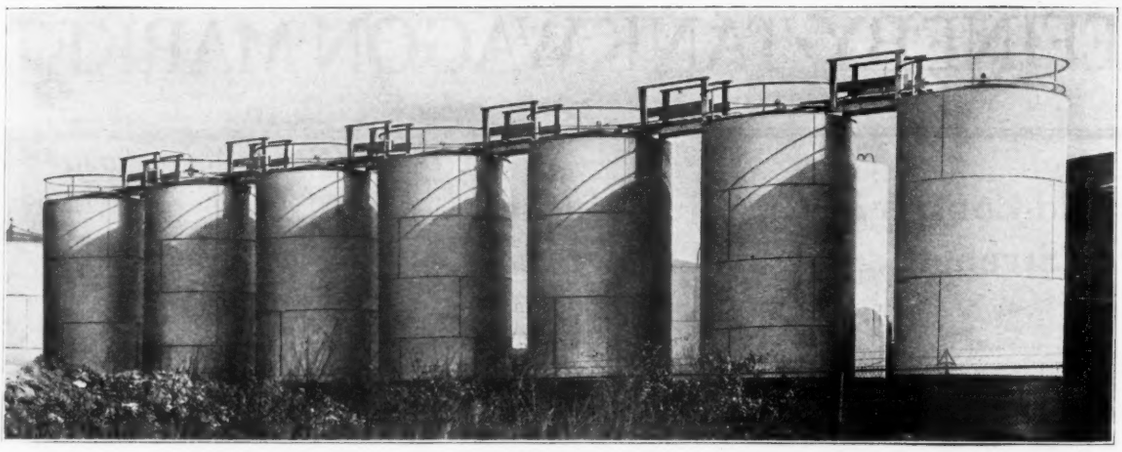
In taking stock of their situation some refiners in the Mid-Continent appear to be giving what seems to be undue

(Continued on page 101)

All prices and market information printed herein have been gathered by the staff of National Petroleum News from reliable sources and so far as can be ascertained thoroughly represent the going markets as defined for each product on the date given for those particular prices. Both buyers and sellers have been checked in the gathering of this information and actual sales studied.

These prices and this information are subject at all times to correction for errors. Anyone having knowledge of any facts which would indicate anything different from the information which is given, is especially urged to send in those facts to the head office of National Petroleum News at once, or take them up with the nearest representative. All such facts will be promptly and thoroughly investigated.

The staff of National Petroleum News is cognizant of the fact that this market information has come to have a high standing in the industry. It wants to not only maintain that standing, but to improve it and to that end, invites the co-operation of the entire oil industry.



The present low price of Graver tanks will be continued for January and February delivery.

We can do this because of our stock of low price steel.

If you will need tanks this spring it will be to your advantage to order them for shipment not later than February.

GRAVER *Corporation*

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EAST CHICAGO, IND.

Steel Tanks and General Steel Plate Construction
Water Softening and Purifying Equipment

NEW YORK CHICAGO

CEDAR RAPIDS LANSING TULSA HOUSTON

Refinery Markets on Light Oils and Lubricants

Pennsylvania, Oklahoma, North and South Texas, Louisiana, Arkansas, California

GASOLINE AND NAPHTHA

PENNSYLVANIA	Prices Jan. 12	Prices Jan. 5	Prices Dec. 29
52-54 Naphtha	10¼ 10½	10¼ -10½	10¼-10½
54-56 Naphtha	10½-10¾	10½-11	10½-10¾
58-60 Gasoline	11 -11¼	11 -11⅜	11 -11¼
60-62 Straight-run gasoline	12 -12¼	12 -12½	12 -12½
62-64 Straight-run gasoline	13 -13¼	13 -13½	13¼-13¾
64-66 Straight-run gasoline	14 -14½	14½-14¾	14½-15
68-70 Straight-run gas. 350 E.P.	16¼-16½	18⅜-19	18⅜-19
68-70 Straight-run gas. 305-320 E.P.	17½-18		
70-72 Straight-run gas. 300-305 E.P.	18½-19		
OKLAHOMA			
48-50 450 E. P. Naphtha	- 7¼	- 7¼	7¼- 7½
50-52 450 E. P. Naphtha	- 7½	7¼- 7½	7½- 7¾
56-58 450 E. P. gasoline	- 7¾	7½- 7¾	- 7¾
58-60 U.S.Motor 437 E.P.181 i.b.p.	- 8	7¾- 8	7¾- 8¼
60-62 400 E. P. gasoline	- 9½	9 - 9¼	9 - 9¼
64-66 375 E. P. gasoline	10¾-11	10¼ 10⅝	10¼-10⅝
68-70 350 E. P. gasoline	11½-11¾	11¼-11½	11½-11¾
NORTH TEXAS			
48-52 450 E. P. Naphtha	7½- 7¾	7¼- 7½	7¼- 7½
56-58 450 E. P. gasoline	7¾- 7⅞	7½- 7⅝	7½- 7¾
58-60 450 E. P. gasoline	- 8	7¾- 7⅞	- 7¾
58-60 U. S. Motor gasoline	- 8¼	- 8	7⅞- 8¼
60-62 400 E. P. gasoline	9½- 9¾	9 - 9¼	9 - 9¼
64-66 390 E. P. gasoline	10½-10¾	-10	9¾-10
64-66 375 E. P. gasoline	10¾-11	-10¼	10 -10¼
68-70 350 E. P. gasoline	-11½	11 -11½	11¼-11½
NORTH LOUISIANA			
58-60 450 E. P. gasoline	8 - 8¼	- 8	8 - 8¼
58-60 437 U. S. Motor Gasoline	8¼- 8½	8½- 8¾	8⅜- 8⅝
64-66 390-400 E. P. gasoline	10⅞ 11⅛	10½-10¾	10⅝-10⅞
64-66 375 E. P. gasoline	11⅛-11⅜	10¾-11	11¼-12
ARKANSAS			
58-60 450 E. P. gasoline	8¼- 8½	8 - 8¼	8¼- 8½
58-60 U. S.Motor gasoline	8½- 8⅝	8⅜- 8⅝	8½- 8¾
64-66 375 E. P. gasoline	11¼-11½	10¼-10½	10¼-10½
CALIFORNIA			
54-56 U. S. Motor gasoline	- 9	- 9	- 9

Note: This is without the 2-cent state tax included in the price by California refiners for shipments within the state.

NATURAL GASOLINE

OKLAHOMA			
Grade Double A	9 - 9¼	- 9	- 9
Grade A	9 - 9¼	- 9	- 9
Grade Double B	8¼- 8½	- 8¼	8 - 8¼
Grade B	8¼- 8½	- 8¼	8 - 8¼
Grade C	7¾- 8	7¾- 8	7¾- 8

NOTE.—Specifications adopted by Ass'n of Nat. Gaso. Manufacturers:
Grade Double A.—80-87.9 gravity, 90% recovery, not over 375 E.P.
Grade A.—72-79.9 gravity, 90% recovery, not over 375 E. P.
Grade Double B.—84-92 gravity, 85% recovery, not over 375 E. P.
Grade B.—76-83.9 gravity, 85% recovery, not over 375 E. P.
Grade C.—80-90 gravity, 78% recovery, not over 375 E. P

NORTH TEXAS			
*Grade Double A	9 - 9¼	8¾- 9	- 8¾
*Grade A	9 - 9¼	8¾- 9	- 8¾
*Grade Double B	8¼- 8½	- 8¼	8 - 8¼
*Grade B	8¼- 8½	- 8¼	8 - 8¼
Grade C	7¾- 8	- 7¾	7¾- 8

*F. O. B. Breckenridge

CALIFORNIA			
73-78 375 E. P.	-12	-12	-12
OKLAHOMA NATURAL GASOLINE—BLENDS			
64-66 435-440 E. P.	- 8¼	8¼- 8½	8 - 8¼
NORTH TEXAS			
64-66 435-440 E. P.	8 - 8¼	8 - 8¼	8 - 8¼
PENNSYLVANIA			
68-70 Grav. 437 E. P.	11¾-12	12 -12¼	12¼-12⅜
64-66 Grav. 437 E. P.	11¾-12	12 -12¼	12 -12¼
60-62 Grav. 437 E.P.	11¾-12	11¼-11½	11½-11¾
68-70 Grav. 420 E. P.	-12½	12½-13	13 -13½
68-70 Grav. 400 E.P.	-13½	13½-14	14 -14½

BURNING OILS

PENNSYLVANIA			
45 Water White Kerosone	7¼- 7⅜	7¼- 7⅜	7¼- 7⅜
46 Water White Kerosene	- 7¾	7¾- 8	7¾- 8
47 Water White Kerosene	- 8¼	8¼- 8½	8¼- 8½
300 Burning Oil	7¾- 8	7¾- 8	7¾- 8
OKLAHOMA			
40-42 Prime White Distillate	4⅛- 4⅜	4⅛- 4¼	4 - 4¼
41-43 Water White Kerosene	- 4½	4¼- 4⅜	4¼- 4½
42-44 Water White Kerosene	4⅝- 4¾	4½- 4¾	4½- 4¾
NORTH TEXAS			
41-43 Water White Kerosene	4⅜- 4½	4½- 4¾	4¼- 4½
42-44 Water White Kerosene	4½- 4¾	- 4¾	4½- 4¾
NORTH LOUISIANA			
41-43 Water White Kerosene	4¾- 5	4½- 4¾	4¾- 5
ARKANSAS			
41-43 Water White Kerosene	5 - 5¼	4⅞- 5⅛	4¾- 5
42-44 Water White Kerosene	5¼- 5½	5⅛- 5⅜	5 - 5¼
CALIFORNIA			
40-42 Water White Kerosene	-14	-14	-14

NEUTRAL OILS

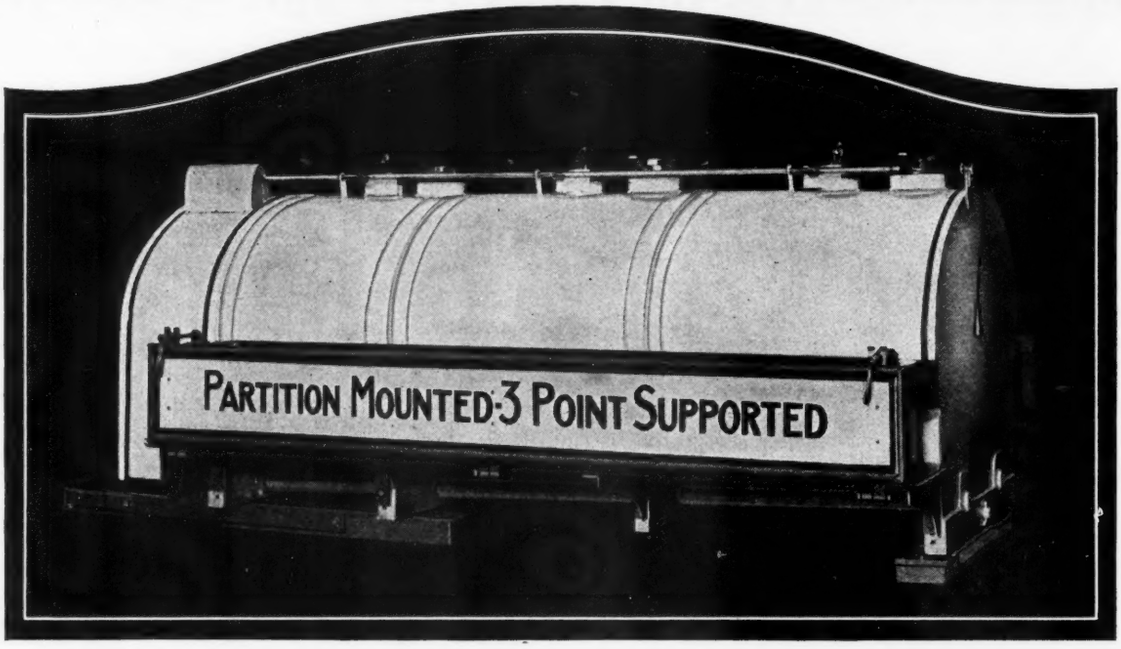
PENNSYLVANIA	Prices Jan. 12	Prices Jan. 5	Prices Dec. 29
(Viscosity at 70°F.)			
220 Vis. No. 3 Assoc. Filt.	-28½	-28¾	-28
200 Vis. No. 3 Assoc. Filt.	25½-26	25½-26	25½-26
180 Vis. No. 3 Assoc. Filt.	-24	23½-24	23 -23½
150 Vis. No. 3 Assoc. Filt.	-22	21 -21½	21 -21½
(Non-Viscous)			
34 Grav., 350-360 Flash	8 - 8½	8 - 8¾	8 - 8½
36 Miners Neutrals 300-305 Flash	7 - 7½	7 - 7½	7 - 7½
OKLAHOMA			
(Viscosity at 100° F.)			
70 Vis. No. 2½-3 color	4¼- 4½	4¼- 4½	4¼- 4½
100 Vis. No. 2 color	4¾- 5	4¾- 5	4¾- 5
100 Vis. No. 2½-3 color	4¼- 4½	4¼- 4½	4¼- 4½
150 Vis. No. 3 color	7¼- 7½	7¼- 7½	7¼- 7½
150 Vis. No. 4 color	6¾- 7	6¾- 7	6¾- 7
180 Vis. No. 3 color	8¾- 9	8¾- 9	8¾- 9
180 Vis. No. 4 color	8¼- 8½	8¼- 8½	8¼- 8½
180 Vis. No. 5 color	7¾- 8	7¾- 8	7¾- 8
200 Vis. No. 3 color	10¼-10½	10¼-10½	10¼-10½
200 Vis. No. 4 color	9¾-10	9¾-10	9¾-10
200 Vis. No. 5 color	9¼- 9½	9¼- 9½	9¼- 9½
220 Vis. No. 3 color	11¾-12	11¾-12	11¾-12
220 Vis. No. 4 color	11 -11¼	11 -11¼	11 -11⅛
220 Vis. No. 5 color	10¼-10½	10¼-10½	10¼-10⅜
240 Vis. No. 3 color	13¾-14	13¾-14	13¾-14
240 Vis. No. 4 color	13 -13¼	13 -13¼	13 -13¼
240 Vis. No. 5 color	12¼-12⅜	12¼-12⅜	12¼-12⅜
280 Vis. No. 3 color	16½-17	16½-17	16½-17
280 Vis. No. 4 color	15¼-15⅜	15¼-15⅜	15¼-15⅜
280 Vis. No. 5 color	13¾-14	13¾-14	13¾-14
300 Vis. No. 5-6 color	16¾-17	16¾-17	16¾-17
GULF COASTAL			
(Viscosity at 100°F; cold test 0)			
100 Vis. No. 2 Color Unfilt. Pale	8¾- 9	8¾- 9	8¾- 9
200 Vis. No. 3 Color Unfilt. Pale	12½-13½	13 -13½	13 -14
300 Vis. No. 3 Color Unfilt. Pale	15 -15½	15 -15½	15 -16
500 Vis. No.3½ Color Unfilt. Pale	17 -18	17 -18	17 -18
750 Vis. No. 4 Color Unfilt. Pale	22½-23	22½-23	22½-23½
200 Vis. No. 2 Color Filt. Pale	22 -23	22 -23	22 -23
300 Vis. No. 2 Color Filt. Pale	25½-26⅜	25½-26⅜	25½-26⅜
500 Vis. No. 2½ Color Filt. Pale	29½-30⅜	29½-30⅜	29½-30⅜
750 Vis. No.2½ Color Filt. Pale	39⅜-40⅜	39⅜-40⅜	39⅜-40⅜
200 Vis. No.5½ Color Red Oil	11½-12	11½-12	11½-12⅜
300 Vis. No.5½ Color Red Oil	13½-14	13½-14	13½-14⅜
500 Vis. No. 6 Color Red Oil	15 -15½	15 -15½	15⅜-16
750 Vis. No. 6 Color Red Oil	20⅜-21	20⅜-21	20½-21⅜
CALIFORNIA			
(Viscosity at 100° F.)			
100 Vis. No. 2 color	13½-14⅜	13½-14⅜	13½-14⅜
100 Vis. No. 3 color	9 -10	9 -10	9 -10
200 Vis. No. 3 color	15 -16	15 -16	15 -16
300 Vis. No. 3 color	16 -17	16 -17	16 -17
450 Vis. No. 3½ color	19½-20⅜	19½-20⅜	19½-20⅜
550 Vis. No. 3 color	21½-22⅜	21½-22⅜	21½-22⅜
600 Vis. No. 3½ color	23½-24⅜	23½-24⅜	23½-24⅜
100 Vis. No. 5 color	8 - 9	8 - 9	8 - 9
200 Vis. No. 5 color	13½-14⅜	13½-14⅜	13½-14⅜
300 Vis. No. 5 color	14 -15	14 -15	14 -15
400 Vis. No. 5 color	16 -17	16 -17	16 -17
500 Vis. No. 5 color	17 -18	17 -18	17 -18
600 Vis No. 6 color	18 -19	18 -19	18 -19
700 Vis. No. 7 color	19½-20⅜	19½-20⅜	19½-20⅜

CYLINDER STOCKS

OKLAHOMA			
190-200 Vis. at 210° Bright Stock	29 -34	29 -34	29 -34
150-160 Vis. at 210° Bright Stock	26 -30	26 -30	26 -30
Medium Filtered Stock	16½-17	16½-17	16½-17
600 Steam Refined Olive Green	8 - 9	8 - 8½	8 - 8½
600 Steam Refined Dark Green	6 - 6½	6 - 6½	6 - 6½
Black Oil	4¼- 4½	4 - 4¼	4 - 4¼
PENNSYLVANIA			
(1-inch Immersion Test)			
600 Steam Refined	22 -22½	-22½	-22½
635 Steam Refined	-26½	-26½	-26½
650 Steam Refined	28 -28½	28 -28½	-28½
600 Flash	31 -32	31 -32	30½-31½
600 Warren E.	25 -25½	25½-26	25½-26
600 Oil City E.	24 -24½	24 -25	24 -24½
600 Filtered D	31 -32	31 -33	30 -31
Cold Test Stocks (bright filtered)	38 -39	38 -39	38 -39
Cold Test Stock (dark filtered)	36 -37	36 -37	36 -37
Black Oil	- 8	- 8	- 8

(Note.—Prices of total immersion test goods average ½ to 1½ cents per gallon higher.)

Above prices are f. o. b. refinery in tank car. They are the prices at which the bulk of the products on the open market move. Whoever has knowledge of any open market prices on any considerable quantity of goods differing from the foregoing, will favor us with this information.



The Advance Design

of Columbian Partition Mounted, 3-point Supported Truck Tanks is based on eight (8) issued patents:

March 12, 1918 May 25, 1920 Aug. 31, 1920 July 17, 1923
Sept. 23, 1919 May 25, 1920 Apr. 5, 1921 Aug. 28, 1923
Other Patent Applications Pending

This is merely an indication of the initiative and creative ability of the Columbian engineering staff.

Here is illustrated the truck tank of tomorrow. It is equipped with internal safety valves, automatically controlled. Control system is of the selective type, opening any one valve selected, or of the master type, opening all valves simultaneously. Control head is located in bucket box. The closing of the bucket box door automatically closes all internal valves. Fusible link closes them in the fire emergency. May also be tripped from driver's seat.

Fire regulations become more stringent every day. Columbian has met all regulations where called upon for a test. We believe we have produced an absolutely fire-proof truck tank.

These other exclusive features easily identify the Columbian and account for its wonderful performance—time has never yet measured its full life—no Columbian has ever yet worn out:

Partition Mounted Heavy wood sills and cross cradles (deadload) are eliminated. You can haul more live load without increasing the gross load on the truck. This lessens the cost per gallon per mile of hauling.

3-point Supported Front end of tank is carried on a single pivot point. This frees the tank and the truck of twisting strains. It lengthens the life of both tank and chassis—eliminates repairs. It makes the tank ride the truck like a swan rides the water.

Jointless Pipelines One piece welded pipe lines without threaded joints or right angle bends. Component units of the tank—not just screwed on attachments. Funnel outlets from compartments and pipe lines sloped toward the rear empty tanks 25% faster. Drain every drop.

Removable Side Racks Panel side or pipe rail side carrying racks are adjustable up or down and removable. Load them to the guards in the emergency or strip for the speed trip.

Welded-on Bucket Box Bucket box is a welded on continuation of the tank body—not an attachment. Has removable bottom for easy access to faucets.

A Single Steel Unit The tank body, its mounting, its pipe lines and its bucket box are expertly welded into a single unit—virtually one piece of high grade copper bearing steel.

Dished Heads & Partitions Heads and partitions are much heavier than commonly used and are dished on special machines in our own plant—the strongest heads and partitions put in any truck tank, bar none. Double partitions if wanted—only single Columbian partitions are needed.

Standardized Sizes Overnight shipping service may be had on Columbian standardized sizes. Concentrated production on these brings you the lowest available prices on quality tanks into which 30 years of tank building experience is built.

Truck Tanks
Oil Field Tanks
Bulk Station Tanks

Underground Tanks
Floating Tank Decks
Barrels, Buckets

Carrying Cans,
Funnels
Faucets, Valves

Oil and Gasoline
Pumps
Plates, Sheets, Angles

COLUMBIAN STEEL TANK COMPANY

EST'D 1894

TANKS FOR THE WORLD

1405-1625 WEST 12TH STREET KANSAS CITY, MISSOURI

NEW YORK 30 Church Street
TULSA, OKLA. Owasso and Frisco Tracks
DALLAS, TEXAS 210 Southwestern Life Bldg.
LOS ANGELES, CALIF. 806 Wright & Callender Bldg.
SAN FRANCISCO, CALIF. 564 Market Street

Refinery Markets On Wax And Heavy Oil Products

Pennsylvania, Oklahoma, North and South Texas, Louisiana, Arkansas, California

WAX

PENNSYLVANIA	Prices Jan. 12	Prices Jan. 5	Prices Dec. 29
	(Per Pound New York)		
122-124 White Crude Scale	5⅝- 5¾	- 5⅝	- 5⅝
124-126 White Crude Scale	5¾ - 5⅞	- 5¾	- 5¾
OKLAHOMA			
	(Per Pound Group 3)		
124-126 White Crude Scale	5¼- 5⅜	- 5¼	5 - 5¼
CALIFORNIA			
White Crude Scale	7½- 8	7½- 8	7½- 8

FUEL OIL

PENNSYLVANIA			
36-40 Fuel Oil	6½- 6¾	6½- 6¾	6½- 6¾
30-34 Fuel Oil	6 - 6¼	6 - 6¼	- 6
OKLAHOMA			
38-40 Straw distillate	4 - 4⅛	4 - 4⅛	- 4
36-38 Straw distillate	3⅞- 4	3⅞- 4	3⅞- 4
32-36 Gas oil	- 3⅝	3½- 3⅝	3⅜- 3½
26-30 Fuel oil (Bbl.)	-1.40	-1.35	1.30-1.35
24-26 Fuel oil (Bbl.)	1.32½-1.35	-1.30	1.25-1.27½
24-26 Fuel oil (Buyers' cars)	1.30 1.32½	-1.30	1.25-1.27½
20-22 Fuel oil (Bbl.)	-1.30	1.27½-1.30	-1.25

NORTH TEXAS	Prices Jan. 12	Prices Jan. 5	Prices Dec. 29
38-40 Straw Distillate	3⅞- 4	3¾- 4	3⅝- 3¾
32-36 Gas Oil (Gal.)	- 3½	3½ 3¾	3⅜- 3½
24-26 Fuel, per bbl	-1.35	1.27½-1.30	-1.25
GULF COASTAL			
Fuel	1.65-1.75	1.65-1.75	1.60-1.75
Gas Oil	4¼- 4¾	4¼- 4¾	4¼- 4¾
NORTH LOUISIANA			
32-36 Gas Oil (Gal.)	3½- 3¾	3½- 3¾	3¼- 3½
18-22 Fuel Oil (Bbl.)	1.30-1.35	-1.20	1.15-1.20
ARKANSAS			
38-40 Distillate	4¼ 4½	4½- 4¾	- 4
32-36 Gas Oil	3⅞- 4	3¾- 3¾	3¼- 3½
20-24 Refinery Fuel Oil (Bbls.)	-1.25	1.20-1.25	1.20-1.25
Smackover Crude Fuel (Bbls.)	1.25-1.30	1.25-1.30	1.15-1.20
East Field Crude Fuel (Bbls.)	1.25-1.30	1.25-1.30	1.15-1.20
CALIFORNIA			
14-18 Fuel Oil (Bbl.)	1.40	1.40	1.40
14-18 Bunker Oil (Bbl.)	1.40	1.40	1.40
24-30 Gas Oil (Bbl.)	1.65	1.65	1.65
27 + Diesel Oil (Bbl.)	1.65	1.65	1.65

Above prices are f. o. b. refinery in tank car. They are the prices at which the bulk of the products on the open market move. Whoever has knowledge of any open market prices on any considerable quantity of goods differing from the foregoing, will favor us with this information.

(Continued from page 97)

weight to the present difficulty countered in finding free crude. One refiner made up an estimate of gasoline consumption and production for 1925. He granted an increase of 10 per cent in gasoline consumption for the year but estimated that gasoline production could not be increased more than 5 per cent. This refiner based his estimate of production on the theory that sufficient crude would not be available this year in the right areas to permit another big increase in production.

The refiner mentioned is not alone in considering the crude situation of the Mid-Continent refiner grave. And it is the growing thought along this line which makes it appear probable that premiums may be paid generally within a few weeks and the yearly mid-winter crude scramble started.

Undoubtedly the present tight market is intensified by the belief of producers that a crude price raise will come before spring and by speculative buying on the part of some interests. Refiners who are able to do so are trying to lay by a little cheap crude for future use.

Kerosene Higher

The kerosene market in the Mid-Continent was stimulated this week when the Griswold Oil Corp. of Wichita Falls, purchased around 225 cars of 41-43 water white kerosene in Oklahoma and north Texas. It is understood that the goods will move into export channels during January but the name of the buyer for whom Griswold was acting has not been revealed. The price paid was understood to be around 4¼ cents per gallon.

Since the buying, mentioned prices have strengthened materially in Oklahoma. It is possible to find odd cars of untreated 41-43 at 4⅜ cents per gallon by close shopping but the bulk of the material is now moving at 4½ cents per gallon.

Distillates have been easier this week as a result of the moderation in weather conditions in the north. One refiner in Oklahoma was shipping three cars of distillate per day to his Kansas City stations during the latter part of December. This week he was wired to cease shipping for the present. Distillate trucks in Kansas City were being operated night and day by two crews during the cold weather. It seemed almost impossible to supply the demand.

While demand has been somewhat easier there has been no reaction in the distillate prices. Refinery stocks are well reduced by the heavy movement and 4 cents is the lowest price which can be obtained on 38-40 light straw goods. A resumption of heavy distillate shipments is expected when the next cold snap appears.

Lubricating oils are quiet with the exception of steam refined cylinder stocks. The 600 olive green is in particular demand for domestic industrial and export movement. One refiner raised his price of olive to 9 cents per gallon this week. The material was recently selling slowly at 6 cents per gallon. Waxes are still well sold up and strong.

Barnsdall Refining Co. has contracted to deliver to the Indian Refining Co., Lawrenceville, Ill., 1,000,000 gallons of bright stocks over the year at a price based on the price of crude oil. This is said to be the largest order for bright stocks ever placed.

Fuel Oil Higher

Fuel oil appears to have both the refiners and brokers guessing. Many thought it could not rise above $1.25 per barrel but trading has been active this week at $1.30 to $1.35 per barrel. In Kansas fuel oil has moved to Kansas destinations at $1.50 per barrel f.o.b. plant.

Railroads are using an extraordinarily large amount on acount of the cold weather and breaking down of dispatching facilities. Trains are moving slowly and spending a great deal of time on sidings waiting for orders. It is reported that the Frisco between Tulsa and St. Louis expects to keep 200 to 400 men busy for two months or more restoring telegraph lines which were broken down by storms.

The heavy movement of fuel oil and slow return of empty tank cars has created a shortage of dirty cars which is having some effect on the market. In some instances fuel is selling at 2½ to 5 cents per barrel cheaper to buyers who are able to furnish their own tanks.

Gas oil is as scarce and high as fuel. It is going readily at 3⅛ cents per gallon this week.

Gulf Coastal Market Slow

HOUSTON, Jan. 10.—Gulf Coastal lubricant made has been slow during the last week but with the exception of 200 viscosity unfiltered pale, prices were unchanged. Most manufacturers were firm for 13 to 13½ cents for this grade but some high grade material was being offered in some quarters at 12½ cents.

Price Correction

Prices on 122-124 and 124-126 Pennsylvania white crude scale wax were reversed in the issue of January 7. The former grade should have been 5⅝ cents, and the latter 5¾ cents.

5-Cent Tax in Panama

WASHINGTON, JAN. 8.—A sales tax of 5 cents per gallon has been imposed on gasoline by the Republic of Panama. The tax is levied on imports at the time of clearances.

SUMMIT, S. D., Jan. 8.—The Summit Oil Co. has opened a bulk station here, with S. H. Sharf as manager.

Chicago Gasoline Market Is Firmer; Heavier Products Improve

CHICAGO, Jan. 10.—The spot gasoline market was tight toward the end of this week. Resale agents found U. S. Motor hard to buy in Group 3 at 7¾ cents. These agents encountered a weak jobber demand at 8 cents. Some Oklahoma refiners who do not market through resale agents, made sales at 8¼ cents, but the resales were naturally few and mostly small.

The strength of the gasoline market was in the field where exporters have taken up so much high gravity material that the various light grades have advanced ¼ to ½ cent over the week. U. S. Motor became firm as a natural result. Kerosene demand was slow like the gasoline demand, and for the same reason, being off season; but kerosene was not being thrust on the market. A quotation of 4½ cents was the bottom price because stove distillate was in fairly keen demand at only ¼ cent below. But the practice of selling kerosene in the distillate market has been completely abandoned and a jobber who got 41-43 burning oil at 4½ cents was fortunate as some refiners were asking more.

The furnace oil market was easier this week than last, because of the milder weather, which has been welcomed by the jobbers in the fuel oil trade. It has given them a chance to rest their men, repair their rolling stock and replenish their stocks. Gas oil and distillate both were embraced in the ½ cent price range between 3¾ and 4¼ cents. The stove distillate price is currently 4 to 4¼ cents and plenty active considering the weather. Gas oil can be had as low as 3¾ cents but that is the lowest price going and 4 cents is often asked for zero test goods.

The bulk of 24-26 refinery fuel is still moving at $1.35 but it is available at that price from fewer sources than last week, some refiners asking $1.40 and getting it. However, those asking $1.45 are not getting it. The feature of the fuel market is that some of the big buyers are out of the bidding temporarily and most orders are for small lots.

Crude fuels have not moved up proportionately with refinery fuels. Smackover and East Field crude fuel oils are quoted at $1.25 to $1.30, the same as last week, but they show no weakness, and their greater heat content keeps them in steady demand.

Big Refiners Again Buy Pennsylvania Steam Stocks; Market Firm

CLEVELAND, Jan. 12.—Big Refining companies again are buying steam refined cylinder stocks in northwestern Pennsylvania and the market today seems firmer than at any time since the lull in buying set in last month. The firmness has extended to filtered and bright stocks. Prices have not yet started to advance generally but a continuance of the placing of orders for large sized amounts is expected to cause an upward movement.

Prices for 600 steam refined today ranged from 21½ to 23½ cents per gallon, with 22 to 22½ cents predominating. The top price was reported to have been paid by an Atlantic seaboard refiner for a stock of extra good quality with a high viscosity test.

Neutrals and fuel oil continue to be strong and scarce. Wax is also considerably stronger because of the resumption of buying for export. One refiner reported selling last week 1000 barrels of 122-124 A.m.p. scale at 5¾ cents or ⅛ cent more than the general market at the time.

Kerosene has improved after sagging in demand and price early last week. Reports of 45 water white at as low as 7 cents per gallon were heard of although many refiners were holding out for 7¼ cents. The market is firmer today with 7¼ cents the bottom price to the trade.

Gasoline has been rather quiet and refiners have been given a chance to start storing for their spring requirements. Snow is heavy on many of the roads in the territory served normally by the northwestern Pennsylvania refiners and much inter-city traffic has been cut down. There has been thawing but this has impeded rather than helped motor traffic.

Refiners generally are optimistic. They expect early January trade to be quiet for a week or two while buyers are checking up their year end inventory lists. From the second week on, improvement is expected.

Outside of the Bradford district, refiners are still facing a crude stringency. Many producers are not yet satisfied with the prices being paid and are holding up their credit balances.

Kentucky

Fuel oil is stronger and other products in central Kentucky are steady. Prices in central Kentucky today were: Gasoline, 58-60, 10 cents; 60-62, 10½; 62-64, 11½; 64-66, 12½; 68-70, 13¾; 42-44 water white kerosene, 7½; 34-38 gas oil, 5½-5¾, and 24-26 fuel oil, 4⅞.

New England Refinery Prices

(F.O.B. Boston and Fall River)

	Jan. 12	Jan 5
U.S.Motor gasoline (gal.)	10¼	10⅜
30-32 gas oil (gal.)	5⅜	5⅜
40-43 w.w. kerosene	7½	7½

Export Buying Stiffens N. Texas Market

WICHITA FALLS, Jan. 10.—North Texas refinery markets have been extremely active during the past week with prices advancing on gasoline as well as heavy oils. Kerosene and distillates are higher and fuel and gas oil have almost disappeared from the market.

Exporters have given great impetus to the market on gasoline by their constant buying. It is estimated in some quarters that purchases of gasoline during the past 10 days from north Texas refiners will total in excess of 6,000,000 gallons. The Atlantic Refining Co., Carson Petroleum Co. and Sinclair Refining Co. have all bought.

At the opening of the new year, 64-66, 375 end point gasoline was selling in this field at 10 to 10¼ cents per gallon. But recent trading has pushed the price up to 10¾ to 11 cents. A large part of the buying during the early part of this week was done at 10½ cents.

While the bulk of the gasoline bought for export has been of high gravity, there has been some U. S. Motor ordered to move to Gulf ports. One buyer is reported to have paid 8 cents per gallon for 50 cars of U. S. Motor for delivery over the remainder of the month.

It appears impossible today to find any quantity of gasoline in north Texas which can be delivered this month. Buyers are being forced to content themselves with small lots of spot goods. Those refiners who are not sold up now are not willing to sell any great quantity.

Kerosene has been fairly active as a result of substantial purchases made early in the week by one refiner. Generally the going price of 41-43 is 4⅜ to 4½ cents per gallon. The 42-44 grade is scarce. Distillates in the market are confined to stray cars which cannot be bought at less than 3⅞ to 4 cents per gallon.

A majority of the refiners are either cracking their gas oil or are sold up. The few cars which may be had from day to day are bringing 3½ cents per gallon.

Fuel oil buying on the part of the railroads as well as northern interests has forced prices upwards again. In Wichita Falls fuel is largely held at $1.35 per barrel but in other parts of the area some fuel may be had at $1.30 per barrel.

Natural gasolines are stronger as a result of the local buying of refiners who are producing export goods. Grade C is well held at 7¾ to 8 cents and Grade A is scarce at 9 to 9¼ cents.

Tank Wagon Prices, Painters' Naptha

	Jan. 12 V.M.&P. Naphtha	Oleum Spirits
Chicago	17	15
Detroit	18.7	16.2
Milwaukee	17.7	15.2
Minneapolis	19	16.5
St. Louis	16.9	14.4
New York	15.5	....

Tank Wagon, Service Station Markets

Gasoline and Kerosene

BELOW are given in cents a gallon, the tank wagon price of gasoline without the special taxes levied against motor fuels by many states, the amount of the state taxes, the total tank wagon price, with tax added in and the service station or retail price of gasoline as quoted by the Standard Oil Companies in their various marketing territories. The right hand column is the tank wagon price of kerosene. By tank wagon price is meant the price to resale agents or dealers. Usually this price does not apply to sales to consumers from tank wagons.

Prices in effect January 12

S. O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total	Oil S.S.	T.W.
Atlantic City, N. J.	13.5	0	13.5	15.5	13
Newark, N. J.	13.5	0	13.5	*	13
Annapolis, Md.	13	2	15	*	12
Baltimore, Md.	13	2	15	17	11
Cumberland, Md.	13	2	15	17	12.5
Washington, D. C.	14	2	16	18	12.5
Danville, Va.	14	3	17	*	13.5
Norfolk, Va.	14	3	17	19	13.5
Richmond, Va.	14	3	17	19	13.5
Roanoke, Va.	14	3	17	19	13.5
Petersburg, Va.	14	3	17	*	13.5
Charleston, W. Va.	14	2	16	18	13.5
Clarksburg, W. Va.	14	2	16	18	13.5
Keyser, W. Va.	13	2	15	*	13.5
Parkersburg, W. Va.	14	2	16	18	13.5
Wheeling, W. Va.	14	2	16	18	13.5
Williamson, W. Va.	14	2	16	*	13.5
Charlotte, N. C.	12	3	15	17	13.5
Hickory, N. C.	12	3	15	*	13.5
High Point, N. C.	12	3	15	*	13.5
Mt. Airy, N. C.	12	3	15	*	13.5
Salisbury, N. C.	12	3	15	*	13.5
Charleston, S. C.	12.5	3	15.5	17.5	14
Columbia, S. C.	12.5	3	15.5	17.5	14

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK TERRITORY

*New York City	15	0	15	18	13
Albany, N. Y.	15	0	15	17	13
Buffalo, N. Y.	15	0	15	18	13
Rochester, N. Y.	15	0	15	19	13
Syracuse, N. Y.	15	0	15	17	12
Boston, Mass.	15	0	15	18	11
Augusta, Me.	15	1	16	18.5	13
Manchester, N. H.	15	2	17	19.5	13
Burlington, Vt.	15	1	16	18.5	13

*In steel barrels.

ATLANTIC REFINING TERRITORY

Pittsburgh, Pa.	15	0	15	*20	14
Philadelphia, Pa.	15	0	15	*20	14
Allentown, Pa.	15	0	15	*20	14
Erie, Pa.	15	0	15	*20	14
Scranton, Pa.	15	0	15	*20	14
Altoona, Pa.	15	0	15	*20	14
Dover, Del.	15	2	17	20	14
Wilmington, Del.	15	2	17	20	14
Providence, R. I.	15	0	15	18	13
Springfield, Mass.	15	0	15	18	13
Worcester, Mass.	15	0	15	18	13
Hartford, Conn.	15	1	16	19	12
New Haven, Conn.	15	1	16	19	13
Boston, Mass.	15	0	15	18	11

*Contains 2-cent tax collected by retail dealer and paid by him directly to state.

S. O. OHIO TERRITORY

All Ohio points	15	0	15	17	14

S. O. KENTUCKY TERRITORY

Lexington, Ky.	13	3	16	19	14
Louisville, Ky.	12	3	15	17	12
Covington, Ky.	12	3	15	18	14
Clarksdale, Miss.	12	3	15	18	12
Jackson, Miss.	12	3	15	18	10
Natchez, Miss.	11.5	3	14.5	17.5	11.5
Vicksburg, Miss.	11.5	3	14.5	17.5	11.5
Birmingham, Ala.	13	2	15	18	14.5
Mobile, Ala.	12	2	14	17	12.5
Montgomery, Ala*	14	2	16	19	15.5
Atlanta, Ga.	14	3	17	20	13
Augusta, Ga.	14	3	17	20	13.5
Macon, Ga.	14	3	17	20	14.5
Savannah, Ga.	11	3	14	17	13
Jacksonville, Fla.	12	3	15	18	13
Miami, Fla.	14	3	17	20	14.5
Tampa, Fla.	12	3	15	18	13
Pensacola, Fla.	12	3	15	18	13.5

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

S. O. CALIFORNIA TERRITORY

Phoenix, Ariz.	18	3	21	24	21.5
Los Angeles, Cal.	11.5	2	13.5	16.5	15.5
Fresno, Cal.	13.5	2	15.5	18.5	17.5
San Francisco, Cal.	13	2	15	18	15.5
Reno, Nev.	16.5	2	18.5	21.5	19
Portland, Ore.	13	3	16	19	16.5
Seattle, Wash.	13	2	15	18	16.5
Spokane, Wash.	17	2	19	22	20.5
Tacoma, Wash.	13	2	15	18	16.5

S. O. LOUISIANA TERRITORY

	Gasoline T.W.	Tax	Total	Oil S.S.	T.W.
Camden, Ark.	13	4	17	19	13
Little Rock, Ark.	13	4	17	19	11
West Helena, Ark.	13	4	17	19	12
Alexandria, La.	12.5	2	14.5	16.5	13
Baton Rouge, La.	11	2	13	15	11.5
Lake Charles, La.	12.5	2	14.5	16.5	13
New Orleans, La.	11.5	2	13.5	15.5	10
Shreveport, La.	12.5	2	14.5	16.5	13
Bristol, Tenn.	15	2	17	19	13.5
Chattanooga, Tenn.	13.5	2	15.5	17.5	14.5
Knoxville, Tenn.	14.5	2	16.5	18.5	15
Nashville, Tenn.	13.5	2	15.5	17.5	13.5
Memphis, Tenn.	12	2	14	16	14

MAGNOLIA PETROLEUM TERRITORY

Muskogee, Okla.	11.5	2½	14	17	11
Oklahoma City	11.5	2½	14	17	11
Tulsa, Okla.	9.5	2½	12	15	10
Fort Smith, Ark.	11	4	15	18	12
Little Rock, Ark.	13	4	17	19	11
Texarkana, Ark.	12	*4	16	19	10
Dallas, Tex.	10	1	11	14	10
El Paso, Tex.	13	1	14	16	11
Fort Worth, Tex.	10	1	11	14	10
Houston, Tex.	11	1	12	15	10
San Antonio, Tex.	10	1	11	14	10

*Within city of Texarkana, Ark., the state tax on gasoline is 1c per gal. conforming with the Texas state tax. In Texarkana district outside of the city, the 4c state tax applies.

S. O. INDIANA TERRITORY

Chicago, Ill.	†14	0	†14	16	11
Decatur, Ill.	13.2	0	13.2	15.2	11.5
E. St. Louis, Ill.	12.1	0	12.1	14.35	10.6
Joliet, Ill.	13.4	0	13.4	15.4	11.7
Peoria, Ill.	13	0	13	15	11.5
Quincy, Ill.	13.2	0	13.2	15.2	11.3
Indianapolis, Ind.	13.2	2	15.2	17.2	11.7
Evansville, Ind.	13	2	15	17	11.5
South Bend, Ind.	13.4	2	15.4	17.4	11.9
Detroit, Mich.	13.8	0	13.8	15.8	12.2
Grand Rapids, Mich.	13.7	0	13.7	15.7	12.1
Saginaw, Mich.	13.9	0	13.9	15.9	12.3
Madison, Wis.	13.3	0	13.3	15.3	11.5
Milwaukee, Wis.	13.1	0	13.1	15.1	11.3
La Crosse, Wis.	14.2	0	14.2	16.2	12.4
Minneapolis, Minn.	14.2	0	14.2	16.2	12.6
Duluth, Minn.	14.5	0	14.5	16.5	12.6
Mankato, Minn.	14.1	0	14.1	16.1	12.4
Des Moines, Iowa	13.5	0	13.5	15.5	11.9
Davenport, Iowa	13.5	0	13.5	15.5	11.9
Sioux City, Iowa	13	0	13	15	11.5
Mason City, Ia.	13.5	0	13.5	15.5	11.9
St. Louis, Mo.	**12.6	2	14.6	16.9	11
Kansas City, Mo.	††13.9	2	15.9	17.9	10.3
St. Joseph, Mo.	**13	2	15	17	10.9
Fargo, N. D.	14.9	1	15.9	17.9	14.6
Grand Forks, N. D.	15.1	1	16.1	18.1	14.9
Minot, N. D.	15.9	1	16.9	18.9	14.6
Pierre, S. D.	15	2	17	*	13.1
Huron, S. D.	15	2	17	19	13.1
Wichita, Kans.	12.8	0	12.8	14.8	9.8
Bartlesville, Okla.	11.9	2½	14.4	16.4	9.9

†Dumps of 100 or more gallons at 13c per gallon.
*S. O. Indiana does not operate station.
**Includes city tax of ½c
††Includes city tax of 1c

S. O. NEBRASKA TERRITORY

Crawford, Neb.	14	0	14	*	12.25
Omaha, Neb.	11	0	11	13	11.5
McCook	14.75	0	14.75	16.75	13
Norfolk	13.75	0	13.75	15.75	12
North Platte	14.75	0	14.75	16.75	12.75
Scotts Bluff	14.25	0	14.25	16.25	12.25

*Standard has no service station here.

CONTINENTAL OIL TERRITORY

Denver, Colo.	12	2	14	16	13.5
Glenwood Sp'gs, Colo.	18	2	20	*	17.5
Pueblo, Colo.	12	2	14	16	13.5
Basin, Wyo.	16	1	17	*	14
Casper, Wyo.	14	1	15	17	12
Cheyenne, Wyo.	15.5	1	16.5	18.5	13.5
Cody, Wyo.	17	1	18	*	15
Lander, Wyo.	16	1	17	*	14
Sheridan, Wyo.	18	1	19	21	16
Billings, Mont.	16.5	2	18.5	20.5	14.5
Butte, Mont.	18	2	20	22	15
Great Falls, Mont.	18	2	20	22	16
Helena, Mont.	18	2	20	22	16
Miles City, Mont.	17.5	2	19.5	21.5	15.5
Missoula, Mont.	19	2	21	23	14
Ogden, Utah	17.5	2½	20	22	17
Salt Lake City, Utah	17.5	2½	20	22	17
Boise, Ida.	19.5	2	21.5	23.5	19
Idaho Falls, Ida.	19	2	21	23	18.5
Albuquerque, N. M.	19.5	1	20.5	22.5	15.5

*Continental has no service stations at these points.

Week's Price Changes Tank Wagon Market

Continental Oil.—Correction: Missoula kerosene price should have been 14 cents since July 7 instead of 16 cents as published in past issues.

* * *

Price Corrections

The price of Grade C. natural gasoline in Group 3 for Jan. 5, was given in the Jan. 7 issue of this publication as 7¾ cents per gallon. The price on that date should have been 7¾ to 8 cents per gallon. The error was due to a delayed telegram.

Specifications of the two grades of Pennsylvania paraffin wax were reversed in the refinery market price table in the Jan. 7 issue. Price of 122-124 A.m.p. white crude scale should have been 5⅝ cents, and 124-126 A.m.p. 5¾ cents.

Benzol Prices Steady As Output Increases

NEW YORK, Jan. 12.—Shipments of benzol are unusually large for this time of the year and owing to the heavy increase in production there is no longer complaint about difficulty in obtaining supplies.

The enormous demand from the steel industry for coke tends to keep production of benzol on the increase, and is now very close to normal, after sharp curtailment for several months.

Prices were appreciably steadier than during the preceding week, and there was less talk of possibility of a reduction during the next few weeks. Prices were well held on a basis of 23 cents a gallon in tank cars for 90 per cent.

	Jan. 12	Jan. 5
Pure, tank cars, works	24-25	24-25
90%, tank cars, works	23	23

Above are industrial grades of benzol; motor grades run 2 cents under to 2 cents over gasoline tank wagon prices at point of delivery.

Price Cutting Continues

LOS ANGELES, Jan. 9.—Price cutting continues in the domestic gasoline market but the situation is improving. Several small refineries from which bootleggers have been getting their supplies, are reported to be in bad financial conditions and may be forced to close before long. Casinghead gasoline is strong; fuel oil is in good demand, but kerosene and lubricants are dull.

Wall Pump Co. now Quincy Compressor

QUINCY, ILL., Jan. 9.—The Wall Pump Co. has changed its name to the Quincy Compressor Co. It has just purchased the building next to its present factory and office building and will move the offices to the new building, according to Macauley Irwin, vice president and manager. A warehouse will be built in the rear.

Complete Export Markets

New York **Gulf Coast** **California**

Most Products In New York Export Market Reflect Strength On Gulf

NEW YORK, Jan. 12
By Special Correspondent

FOUR inquiries for mixed cargoes of gasoline and kerosene appeared in the local market and while it is expected that at least two of these will materialize sometime this week, no confirmed bulk sales were disclosed. Reflecting the heavy buying in the Gulf district, local sentiment was much improved, and while U. S. Motor was offered around at 10¼ cents a gallon refinery at the beginning of the week there was nothing available below 10½ cents on Saturday.

Cased gasoline was moving a little more freely, but orders are chiefly for from 1000 for 5000 cases. Spanish buyers have been purchasing more freely, but much of this business is being diverted to the Gulf. German buyers are inquiring for quite a little gasoline but their views are quite a little below refiners.

United Kingdom buyers are also inquiring more actively. There was a report current that a buyer with Copenhagen connections had purchased a mixed cargo of 45,000 barrels of gasoline and kerosene but details and confirmation were lacking. South American interests are taking larger quantities of cased gasoline, for delivery over the next three months. Local jobbers are purchasing a little more freely, as the consensus of opinion is that gasoline is bound to go higher during the next two or three weeks. U. S. Motor in tank cars delivered to the trade is held at 11½ cents a gallon.

Kerosene was a shade steadier but prices were without change. Water white was quoted at 7 cents a gallon, in tank cars at the refinery while prime white was held at 6 cents. The former could have been had at 6¾ cents on a firm bid, on Saturday. French buyers are purchasing a little more freely but chiefly in lots of from 500 to 1000 drums. Germany is buying hand-to-mouth but Scandinavian buyers are apparently in need of supplies and quite a few orders from 1000 to 2000 drums were received from these sources.

Cased kerosene is moving in a larger way but chiefly against contracts and on consignment. There is a steady shipment to the west coast of Africa and the Levant. Chinese buyers are again inquiring in a spirited way but are not buying much. Domestic consumers are purchasing more freely on a basis of 8 cents a gallon for 45 water white in tank cars delivered to the trade. The tank wagon price is steady at 13 cent a gallon.

Bunker oil is very firm. Receipts of Mexican and California oil continue small and stocks are limited. All of the leading refiners are demanding $1.80 a barrel f.o.b. New York harbor refinery and are not anxious to sell very far ahead at this figure. Diesel oil is in growing demand at $2.10 a barrel at the refinery. Most of the buying in these oils however has been for domestic account and no export sales of consequence were heard of. Furnace oil is well maintained at 6 cents a gallon, refinery for 37-40.

Gas oil remained dull and unchanged at 5¼ to 5½ cents a gallon for 36-40 at the refinery. A good deal of the activity was confined to cleaning up old contracts and very little new business developed. For 28-34 the asking price was 5 cents, refinery. Stocks of both oils are fairly large. Domestic consumers are buying hand-to-mouth.

The lubricating oils were a shade firmer, although Pennsylvania 600 s.r. in barrels New York was available at 28¾ cents a gallon against 29 cents the preceding period. Export demand was a little more spirited. Spindle oil is in better demand both for domestic and foreign account, and prices held up fairly well. Paraffin oils are marking time at unchanged prices.

French buyers were credited with the bulk of the buying although orders from these interests were chiefly for 500 to 100 barrels for prompt shipment. There is a good consignment movement going on which tends to keep prices firm.

The waxes were somewhat more active, but there was no general improvement noted. Foreign buyers are purchasing quite a little for March-April

(Continued on the next page)

New York Export Market

Prices below are averages of actual sales by local exporting Agencies

The following light oil, gas and fuel oil prices are F. O. B. New York refineries, being Products made from Domestic (including California) and Mexican Crudes.

	Jan. 12	Jan. 5
U. S. Motor Gasoline, Tank Cars Delivered	-11¼	-11¼
U. S. Motor Gasoline, Tank Cars Bayonne	-10¾	10¼-10¾
Kerosene, 45-150 W W Tank, Cars Del'd	.08	.07¾
Grade C Bunker, f.o.b.N.Y.	1.80	1.80
Diesel Oil f.o.b. Refinery	2.10	2.10
Gas Oil, 36-40, Bulk, refinery	.05¼	.05¼

PENNA. LUBRICATING OILS

The following prices are cooperage basis f. o. b. New York, products being manufactured by inland refineries.

CYLINDER OILS	Jan. 12	Jan. 5
Penna. Filtered D 600, bbls.	-35	-35
Penna. Filtered E 600, bbls. 32	-33	32 -33
Unfiltered 600 s.r.bbls. 28¾	-29½	29 -30
Unfiltered 650 s.r.bbls. 34	-35	35 -36
600 flash s. r. bbls.	-40	-40
Western 600 s. r. bbls.	-15¼	-15¼
Bloomless 30-31 grav. bbls.	-25	-25
RED PARAFFIN (bbls.)		
300 vis. at 100°F.	23½	23½
250 vis. at 100°F.	23	23
175 vis. at 100°F.	-22½	-22½
High Viscosity Paraffin	20	20
.885 s.g. pale 100 vis. at 100°F	-14½	-15
SPINDLE (bbls.)		
200 vis. at 100°F. Pale	21½	21½
180 Pale	20	20
150 Pale	17	17
BLACK OIL (bbls.)		
25-30 c. t. 14	-15½	14 -15½
15 c. t. 15	-16½	15 -16½

WAXES

(Penna. Stocks)

(F. A. S. Carload Lots)

WHITE CRUDE SCALE	Jan. 12	Jan. 5
122-124 A. m. p.	-05¾	-05¾
124-126 A. m. p.	-05¾	-05¾
MATCH		
105-108 A. m. p.	06¼	06¼
111-115 A. m. p.	06¼	06¼
FULLY REFINED		
118-122 A. m. p.	06	06
123-125 A. m. p.	06¼	06⅜
125-127 A. m. p.	06¼	06½
128-130 A. m. p.	06½	06⅝
130-132 A. m. p.	06¾	06¾
133-135 A. m. p.	07¼	07¾
SEMI REFINED		
122-124 A. m. p.	05¾	06¼
YELLOW CRUDE SCALE		
124-126 A. m. p.	05¾	05¾

PETROLATUMS

(Penna. Stocks)

Snow White	12¾	12¾
Lily White 10½	-11	10½-11
Cream Petroleum Jelly	07¾	07¾
Veterinary	05¾	05¾
Light Amber	07¾	07¾
Dark Amber	05¾	05¾
Dark Green	05¾	05¾

(Cooperage Basis)

MEDICINAL OILS

(Penna. Stocks)

Domestic .875-.885 s.g. drums.	1.00-1.08	1.00-1.80
Domestic .865-.870 s.g. drums.	75- 80	75- 80
Russian .885-.890 s.g. 325-330 vis. drums	1.25	1.25

shipment. Peru has been operating freely in white crude scale wax, while Japan and Sweden are credited with the bulk of the match wax demand. Fully refined waxes are quiet and unchanged.

The medicinal oils marked time the greater part of the week, and demand was very light, but prices held steady. Petrolatums however, are moving in a larger way, and snow white was well maintained at 12¾ cents while lily white was quoted at 10½ cents.

New Orleans Export Market Is Stronger Except For Gas Oil

By Special Correspondent

NEW ORLEANS, Jan. 12

THE buying movement which has been expected for several weeks, has finally materialized and was much heavier than anticipated, no less than six cargoes having been sold with negotiations on, at the end of the week, for the sale of three more.

In addition to these, it was learned that Continental and United Kingdom buyers have already chartered five tankers, for oil which has not as yet been bought.

Demand was chiefly from Spain, United Kingdom and France. Leading Independents received the bulk of the orders. The buying included a cargo of gasoline and kerosene, 56,000 barrels at 10¼ cents for U. S. Motor, 13⅛ cents for 64 gravity; 5¾ cents for prime white kerosene and 7 cents for water white. This cargo will be shipped to a United Kingdom port late in February.

A leading refiner received a cargo order for 42,000 barrels of gasoline and kerosene at the same prices, for early March shipment to France, while one of the other leading refiners booked two cargoes for February-March shipment to England and Spain. The former called for 42,000 barrels of U. S. Motor and 64-gravity gasoline which brought 10½ and 13¼ cents a gallon while the other cargo called for 42,000 barrels of gasoline and kerosene at 10¼; 1 cents and 5¾ and 6¾ cents for U. S. Motor, 64-gravity, prime and water white respectively.

Two other mixed cargoes were closed, one for February shipment to London and the other for March shipment to France but, just who received this business was not made clear. On Saturday, one of the large Independents has virtually closed two sales of gasoline and kerosene with Continental buyers, while a leading refiner was working on another cargo of 56,000 barrels but details in both instances were withheld.

Refiners are very optimistic and expect an active week, in view of the fact that foreign interests have already chartered five tankers, from New Orleans to the Continent and United Kingdom, during February and March. Most of the refiners, on Saturday were asking 10¼ cents for U. S. Motor and 13¼ cents for 64 but were predicting an advance of ½ cent a gallon, early this week, on the strength of the heavy European buying.

Stocks of gasoline and kerosene, abroad, are depleted, and with the first signs of stiffening in prices, there was a rush to cover spring requirements. Early in the week U. S. Motor could have been had at as low as 9¾ cents, in conjunction with kerosene, but there were no sellers at this price on Friday and Saturday.

The advance in north Texas and Oklahoma gasoline prices have also tended to better sentiment. Export interests are now paying 11 to 11¼ cents for 64-gravity and 8¼ cents for U. S. Motor at the refineries in the above districts.

Cased gasoline business was less spirited, although inquiries were much more numerous than during the preceding period with leading factors still asking $2.40 a case for U. S. Motor and $22.70 for 64 gravity. Much of the business was confined to from 2000 to 8000 cases, for nearby shipment to China, Japan, Australia and South America.

Kerosene was a trifle steadier as the week closed. Water white was ¼ cent higher, being rather scarce, with most factors asking 7 cents but prime white was still offered freely at 5¾ cents a gallon, in cargoes. No straight cargo sales of kerosene were uncovered, but as in gasoline, indications are that at least two will be closed sometime this week. Cased kerosene is moving in a routine way and prices are firmer. For water white the asking price is $1.70 while prime white is still quoted at $1.60 a case. There have been numerous inquiries received from the west coast of Africa during the past few

Pacific Export Market

(Cargo lots quotations at seaboard, San Francisco Bay and Los Angeles refinery points, f.o.b. docks.)

	Jan. 12	Jan. 5
Gasoline, U. S. Motor— 54°—56°	08½- 09½	08½- 09½
Gasoline—U. S. Motor blends and special cuts	.09 - 10½	09 - 10½
Gas Oil, 24°—30°B per bbl.	$1.65	$1.65
Diesel Oil, 27°B-plus per bbl.	$1.65	$1.65
Bunker Oil, 14°—18°B per bbl.	$1.40	$1.40
Fuel Oil, 14°—18°B per bbl.	$1.40	$1.40
Kerosene, W. W. 40°—42° B per gal., 125-150 flash test	.05 -06½	05½-06½
Cased Goods		
Gasoline, U. S. Motor	$2.50	$2.50
Kerosene, W. W. 40°—42° B per case, flash test 125-150	$1.55- 1.65	$1.55- 1.65

N. Y. Export Quotations

Furnished by big exporting oil companies. No actual sales. Record for statistical purposes only.

Illuminating Oils

Standard Oil of New Jersey

	Jan. 12	Jan. 5
Bulk, gal., Bayonne	6.50	6.50
Barrels, gal., Bayonne, cargo	13.50	13.50
Cases, gal., Bayonne	16.90	16.90

Prices for water white oil (150 test) are 1 cent higher than those for standard white.

Gasoline-Naptha
(Cents per Gallon)

U. S. Motor, dead bulk	12.50	12.50
U. S. Motor, cases	26.65	26.65
Export Naptha bulk	14.75	14.75
*62-63 deg. bulk	16.00	16.00
66-68 deg. bulk	17.50	17.50

*Grade changed from 64-66 to 62-63 Jan. 9.

Tide Water Oil Company
(f. o. b. Bayonne)

58-59 deg. bulk	14.00	14.00
58-59 deg. cases	27.15	27.15
Export grade, U. S. Motor Specifications bulk	12.50	12.50
63-65 deg. bulk	16.00	15.50
68-72 deg. bulk	18.50	18.00

	Bulk	Barrels	Cases
Standard white 110	6.50	13.50	16.90
Water white 150	7.50	14.50	17.90

The Texas Company

Gasoline, cases	26.65	26.65

Kerosene	Bulk	Barrels	Cases
Standard White	6.50	13.50	16.90
Prime White	7.00	14.00	17.40
Water White	7.50	14.50	17.90

Gulf Export Market

(Actual Sales Prices)

Gasoline

	Jan. 12	Jan. 5
U. S. Motor, Bulk F.O.B.	-.10	09¾-.10
64-66, Bulk F.O.B.	13⅛-.13½	12¾-.13
U. S. Motor, Cases (Cargo Lots)	2.40	2.40
64-66, Cases (Cargo Lots)	2.70	2.70

KEROSENE

Water White, bulk	-.06¾	-.06¾
Prime White, bulk	-.05¾	-.05¾
Water White, cases (Cargo Lots)	1.70	1.70
Prime White, cases (Cargo Lots)	1.60	1.60

GAS AND BUNKER OILS

26-28, gravity, bulk	04¾-05	04¾-05
32 plus, bulk	04¾-05	04¾-05
Grade C, Bunker oil (F.O.B.)	-1.70	1.70-1.75

MEXICAN CRUDE AND BUNKER OILS

*Heavy, f o b Tampico, Taxes to be added	1.35	1.35
Mexican Grade C, Bunker oil F.O.B. Tampico Taxes Paid	1.50	1.50
Mexican C, Bunker oil New Orleans	1.60	1.60

Lubricating Oils

SOUTH TEXAS

(In bulk cargoes of 40,000 to 50,000 bbls)
(Viscosity at 100°F; cold test 0)
(Tanker, F. O. B. Houston)

	Jan. 12	Jan. 5
100 Vis. No. 2 Unfilt. Pale	08	08¾
150 Vis. No. 2½ Unfilt. Pale	10½	10½
200 Vis. No. 3 Unfilt. Pale	13	13
300 Vis. No. 3 Unfilt Pale	16	16
500 Vis. No. 3½ Unfilt. Pale	17	17
750 Vis. No. 4 Unfilt. Pale	23	23
200 Vis. No. 5½ Red Oil	13	13
300 Vis. No. 5½ Red Oil	14	14
500 Vis. No. 6 Red Oil	16	16
750 Vis. No. 6 Red Oil	19	19

*Nominal

days. However, the bulk of the activity is confined to the filling of standing contracts.

Lubricating oils are stronger. Although confirmation is lacking, it was intimated by one well posted authority that at least one, and probably two cargoes of 35,000 barrels each, had been sold for February-March shipment to Germany and France. The trade is convinced that some good-sized business has gone over, owing to the scarcity of offerings of zero cold test oils. Prices for many of these oils are nominal, refiners not being in a position to quote on large lots. British buyers are looking around the market for good-sized lots and with the exception of one or two items there was a general strengthening in the list.

Bunker oil was strong and refiners were asking from $1.60 to $1.70 a barrel, at New Orleans for grade C oil. Stocks are low, and prices are still tending higher. Refiners are unwilling to quote on cargo lots, and a good deal of last week's business was confined to bunkering ships. At Tampico, grade C oil remained firm at $1.50 per barrel, including taxes, while heavy Panuco crude was quoted at $1.35 a barrel, taxes to be added, although a rumor current had it that a small quantity was available at 5 cents below this figure.

Gas oil prices remained unchanged. Export demand was very sluggish and no sales of consequence developed. European consumers say that they can still lay Galician oil down at their various distributing centers much cheaper than they can American gas oil and are consequently showing little interest. Both 26-28 and 32 plus were quoted at 4¾ to 5 cents a gallon, for transparent oil while dark could have been had in small quantities at 4½ cents a gallon in one or two directions.

Paraffin wax was in better export demand, with numerous orders reported for from 50 to 75 tons of white crude scale. Fully refined and match waxes were also in good demand, orders coming chiefly from South America and Japan.

Cargoes Clearing From N. Y.

By Special Correspondent

Date	Destination	Product	Quantity
Dec. 29	Santos Brazil	Ref. Pet.	14,500 Cases
Dec. 29	Santos	Gasoline	5,500 Cases
Dec. 26	Bordeaux	Lubes	1,355 Bbls.
Dec. 23	Port of Spain	Kerosene	500 Cases
Dec. 30	Marseilles	Lubes	1,616 Bbls.
Dec. 30	Naples	Lubes	600 Bbls.
Dec. 26	Santos	Gasoline	2,000 Cases
Dec. 26	Santos	Lubes	619 Bbls.
Dec. 26	Santos	Lubes	14,055 Cases
Dec. 26	La Plata S. A.	Naphtha	3,760 Cases
Dec. 26	La Plata	Ref. Pet.	1,800 Cases
Dec. 26	La Plata	Kerosene	10,000 Cases
Dec. 26	La Plata	Gasoline	500 Cases
Dec. 27	Puerta Plata	Ref. Pet.	2,000 Cases
Dec. 19	Santos	Ref. Pet.	15,136 Cases
Dec. 19	Santos	Gasoline	99,895 Cases
Dec. 24	Nordenham (Germany)	Naphtha	1,366,719 Gals.
Dec. 24	Nordenham	Naphtha	974,635 Gals.
Dec. 24	Nordenham	Ref. Pet.	636,814 Gals.
Dec. 26	Yokohama	Gasoline	6,000 Cases
Dec. 24	Port Swettenham	Ref. Pet.	9,996 Cases

Crude Oil Prices All Fields

EASTERN FIELDS

	1925 Jan. 12	1923 High		1923 Low		1922 High		1922 Low	
Bradford-Allegany	$3.10	Feb.15	$4.25	Nov.13	$2.60	Jan.1	$4.00	July 19	$3.00
Other Pennsylvania	3.00	Feb.15	4.00	Nov.13	2.35	Jan.1	4.00	July 19	3.00
Cabell	1.45	Feb.15	2.76	Nov.13	1.20	Jan.1	2.61	July 19	1.86
Corning	1.50	Feb.15	2.30	Nov.14	1.25	Jan.1	2.40	July 20	1.75
Somerset	1.55	Feb.15	2.55	Nov.13	1.15	Jan.1	2.40	July 19	1.65
Somerset Light	1.70	Feb.15	2.80	Nov.13	1.30	Jan.1	2.65	July 19	1.90
Ragland	.90	Feb.15	1.10	July 10	.75	Jan.1	1.25	July 19	1.00

Somerset oil run prior to Oct. 1, 1923, takes price of 6 cents lower than above quotations.

CENTRAL STATES FIELDS

Wooster	$1.50	Feb.19	$2.50	Nov.9	$1.25	Jan.1	$2.70	Sept.21	$1.90
Lima	1.58	Feb.19	2.58	Nov.9	1.43	Jan.1	2.48	July 20	1.98
Indiana	1.38	Feb.19	2.38	Nov.9	1.23	Jan.1	2.28	July 20	1.78
Princeton	1.37	Feb.19	2.37	Nov.8	1.22	Jan.1	2.27	July 20	1.77
Illinois	1.37	Feb.19	2.37	Nov.8	1.22	Jan.1	2.27	July 20	1.77
Plymouth	.75	Feb.19	1.75	Nov.9	.60	Jan.1	1.65	July 20	1.15
Canadian Petrolia	1.98	Feb.19	2.98	Nov.9	1.83	Jan.1	2.88	July 20	2.38

MID-CONTINENT AND NORTH TEXAS FIELDS

Below 30	$ .75	Currie	$1.25
30-32.9	.90	Mexia	1.25
33-35.9	1.10	Powell	1.25
36 and above	1.25		

Humble's Prices

Ranger and Moran Fields, Wichita and Archer Counties

Below 30	$ .75	33-35.9	$1.10
30-32.9	.90	36 and above	1.25
Wortham	1.25	Richland	1.25

Magnolia's Price Schedule
North and North-Central Texas, Okla., and Kan.

Below 30	$ .75	Corsicana, light, Powell, Mexia	$1.25
30-32.9	.90	Corsicana, heavy	.90
33 and above	1.25	Thrall	1.00

NORTH LOUISIANA—ARKANSAS FIELDS

Caddo, 38 degrees and above	$1.35	Bull Bayou, 38 and above	$1.15
do 35 to 37.9	1.25	do 35 to 37.9	1.00
do 32 to 34.9	1.15	do 32 to 34.9	.85
do below 32	1.00	De Soto	1.20
Homer, 35 and above	1.10	Crichton	1.00
do 33 to 34.9	1.00	Bellevue	1.35
do 31 to 32.9	.90	*Smackover, 25 and above	.95
do below 31	.75	do below 25 Be	.85
Haynesville, 33 and above	1.00	Stephens 26 and above	.90
do below 33	.90	do below 26	.70
El Dorado, 33 and above	1.00	Cotton Valley	.95
do below 33	.90		

GULF COASTAL FIELDS

	1925 Jan. 12	1923 High		1923 Low		1922 High		1922 Low	
Spindletop	$1.50	Mar.15	$1.75	Aug.18	$1.00	Jan.1	$1.25	Dec.30	$1.25
Goose Creek "A"	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Goose Creek "B"	1.25	Mar.15	1.50	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Sour Lake	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Humble	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Hull "A"	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Hull "B"	1.25	Mar.15	1.80	Jan.1	.80	Jan.1	1.25	Dec.30	1.25
West Columbia	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Edgerly	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Vinton	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Jennings	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Saratoga	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Orange "A"	1.50								
Orange "B"	1.25								
Pierce Junction "A"	1.50								
Pierce Junction "B"	1.25								

WYOMING FIELDS

Elk Basin	$1.20	Feb.17	$2.10	Nov.9	$ .95	Jan.1	$1.90	Aug.4	$1.20
Grass Creek	1.20	Feb.17	2.10	Nov.9	.95	Jan.1	1.90	Aug.4	1.20
Big Muddy	.75	Feb.17	1.65	Nov.9	.45	Jan.1	1.40	Aug.4	.70
Salt Creek	.85	Feb.17	1.65	Nov.9	.60	Jan.1	1.40	Aug.4	.70
Lance Creek	1.15	Feb.17	2.10	Nov.9	.80	Jan.1	1.90	Aug.4	.20
Rock Creek	.95	Feb.17	1.75	Nov.9	.60	Jan.1	1.50	Aug.4	.80
Osage	1.15	Feb.17	2.10	Nov.9	.80	Jan.1	1.90	Aug.4	1.20
Cat Creek, Mont	1.20	Feb.17	2.10	Nov.9	.95	Jan.1	1.90	Aug.4	1.20
Sunburst, Mont	.90	Feb.17	1.50	June 6	.70				

CALIFORNIA

14-19.9	$1.00	25-25.9	$1.10	30-30.9	$1.25
20-20.9	1.01	26-26.9	1.13	31-31.9	1.28
21-21.9	1.02	27-27.9	1.16	32-32.9	1.31
22-22.9	1.03	28-28.9	1.19	33-33.9	1.34
23-23.9	1.05	29-29.9	1.22	34-34.9	1.37
24-24.9	1.07			35 and above	1.40

ROSECRANS FIELD—EFFECTIVE SEPT. 24, 1924

36-36.9	$1.46
and for each increase of one full degree above 36° gravity, up to and including 41.9° gravity, 6 cents per barrel additional	
42 and above	1.89

British Importations

During the week ended December 22 imports of petroleum into the United Kingdom aggregated 29,927,882 gallons. Larger receipts follow:

Consignee	Imperial Gallons	Product	Port of Origin
London:—			
Merchant Trad.	2,077,181	Gasoline	B. Rouge
Shell	2,058,674	Crude	Curacao
Liverpool:—			
Anglo Mex.	110,328	Fuel Oil	Tampico
Shell Mex.	1,162,594	Fuel Oil	Trinidad
Anglo Amer.	740,253	Lubes	S. Francisco
Hull:—			
Anglo Amer.	2,577,330	Gasoline	B. Rouge
Anglo Amer.	1,527,980	Kerosene	B. Rouge
Manchester:—			
Anglo Amer.	744,120	Kerosene	New York
Anglo Amer.	758,168	Lubes	Phila.
Shell Mex.	1,284,075	Benzine	B. Pappan
Shell Mex.	1,835,425	Crude	Tampico
Southampton:—			
Anglo Amer.	1,142,790	Gas Oil	New York
Shell Mex.	1,230,855	Fuel Oil	Tampico
Shell Mex.	842,710	Fuel Oil	Tampico
Swansea:—			
Nat'l Ref.	6,646,600	Crude Oil	Abadan
Anglo Mex.	1,765,280	Fuel Oil	P. Mexico
Grangemouth:—			
Scottish Oils	2,332,250	Crude	Abadan
Aberdeen:—			
Shell Mex.	512,605	Fuel Oil	Trinidad

British Importations

During the week ended December 15 there were imported into the United Kingdom 34,910,788 gallons of petroleum. Larger receipts follow:

Consignee	Imperial Gallons	Product	Port of Origin
London:—			
Shell	1,738,708	Crude	Curacao
Shell	1,380,147	Benzine	S. Pedro
Lube Producers	238,618	Crude	Suez
Brit. Pet.	1,237,126	Gasoline	Trinidad
Van Ommeren	261,513	Gasoline	Rouen
Anglo Amer.	1,475,500	Gas	P.A.Pierre
Liverpool:—			
Anglo Mex.	826,000	Fuel	Tampico
Anglo Mex.	1,439,200	Fuel	Tampico
Anglo Amer.	742,800	Lubes	Phila.
Bristol:—			
Anglo Amer.	856,470	Gas	New York
Anglo Mex.	1,070,000	Gasoline	Tampico
Hull:—			
Shell	1,452,135	Gasoline	S. Pedro
Manchester:—			
Shell	170,139	Benzine	S. Pedro
Shell	577,322	Fuel Oil	Trinidad
Lube Producers	634,060	Lubes	Port Mex.
Southampton:—			
Anglo Amer.	1,219,440	Gasoline	Beaumont
Anglo Mex.	1,604,800	Fuel	Tampico
Brit. Mex.	1,983,529	Fuel	New Orleans
Brit. Mex.	2,295,050	Crude	Orangestead
Swansea:—			
Nat'l Ref.	2,464,500	Crude	Abadan
Nat'l Ref.	1,534,000	Crude Dist.	Abadan
Nat'l Ref.	2,464,500	Crude	Abadan
Nat'l Ref.	2,464,500	Crude	Abadan
Nat'l Ref.	2,438,000	Crude Dist.	Abadan
Nat'l Ref.	1,519,545	Crude	Abadan

This Week Begins Wet And Ends Cold

CHICAGO, Jan. 12.—Normal temperatures will prevail in the Chicago forecast area, which includes Standard Oil Co. of Indiana territory, during the early days of this week. After the middle of the week, however, temperatures will fall and some extremely cold weather may be expected in the upper Mississippi and lower Missouri river valleys.

Precipitation will come, the weather man predicts, early in the week throughout the whole district. In the northwest it will be snow, in the Ohio river valley it will be rain, and either or both in the Great Lakes country. The same character of "falling weather" is expected for late in the week, with the temperatures lower.

Except for scattered showers on Wednesday of last week, the forecast of a wet week was in error. Almost every day was fair throughout the middle west and temperatures were moderate. There was some mud on the country roads but city motoring picked up and travel on paved roads brought a demand for oil products that had not been anticipated.

Last month was an exceptionally cold December in the Great Lakes country, the mean temperature in Chicago being 6.6° below normal. This record was established in spite of the fact that the first half of the month was normal.

Refiners', Compounders' Supplies

Following are the average market prices for the week on materials used by refiners and Compounders f. o. b. shipping point as effective this date.

Refiners' Supplies

	Jan. 12	Jan. 5
Soda Ash light 58% bags cwt.	$1.38	$1.38
Silicate of Soda 60 deg. Drums.....cwt.	1.70	1.70
Sal Soda wks.....cwt.	1.10–1.25	1.10–1.25
Caustic Soda 76% solid.cwt.	3.10	3.10
Chloride of Lime.....cwt. Works.....	1.90–2.10	1.90–2.10
Sulphuric Acid 60 deg. tank cars f. o. b. shipping point.....per ton	9.00–10.00	9.00–10.00

Compounders' Supplies (Open Market)

Vegetable Oils—		
Linseed carloads Spot....gal.	.1.15	.1.15
Jan.-Feb.....	.1.15	.1.15
March-April.....	.1.16	.1.16
May-June.....	.1.17	.1.17
Tanks, spot.....	.1.09	.1.09
Less carload Spot.....gal.	.1.18	.1.18
Less than 5 Bbls. Spot.....	.1.21	.1.21
Boiled, tank Spot.....	.1.11	.1.11
Boiled, carloads Spot.....gal.	.1.17	.1.17
*Soya Bean Spot, Tanks...lb.	.12	.12
Animal Oils—		
English Degras.....lb.	.04¾	.04¾
Domestic Degras, bbls., carloads.....lb.	.04¼	.04¼
*Horse.....lb.	.09½	.09½
Oleic Acid—		
Dist.....lb.	.11½	.11½
Saponified.....lb.	.11½	.11½
Lard Oils—		
Prime		
Winter Strained.. 1 to 1½ffa.40‡45c.t.lb.	.19¾	.19¾
Extra		
Winter Strained.. 2 to 4½ffa.40/45c.t.lb.	.18	.18
Extra..... 4 to 5 ffa.40/45c.t.lb.	.16¼	.16¼
Extra No. 1. 7 to 10 ffa.40/50c.t.lb.	.14¾	.15¼
No. 1.....15 to 18 ffa.40/45c.t.lb.	.14¼	.14¾
No. 2.....22 to 23 ffa.40/45c.t.lb.	.13¾	.14¼
Prime Edible Tallow under 1½ ffa. 40/45c.t.N.Y.....lb.	.12½	.12¼
Tallow acidless.....lb.	.13¾	.13¾
Lard Stearine.....lb.	.19	.19
Oleo Stearine.....lb.	.11¾	.12
Neatsfoot Oil—		
Pure.....bbls.-lb.	.13¾	.13¾
Extra.....do lb.	.14¾	.15¼
No. 1.....do lb.	.14¼	.14¾
Cold pressed.....lb.	.18½	.19
Fish Oils—		
Menhaden Oil		
Light pressed.....gal.	.70–.72	.70–.72
White.....gal.	.75	.75
Yellow bleached.....gal.	.73	.73
*Herring tank cars coast.....gal.	.40	.40
Whale, extra winter bleached.....gal.	.80	.80
Seal.....gal.	Nominal	
Naval Stores—		
Turpentine, N. Y.....gal.	.93	.86
Turpentine†.....gal.	.87½	.81
Rosin B. N. Y.....Bbl.	8.20	7.75
Rosin F. N. Y.....Bbl.	8.20	7.75
Rosin B†.....Bbl.	7.00	6.60
Rosin F†.....Bbl.	7.00	6.60
Rosin Oil 1st run.....gal.	.45	.45
Rosin Oil 2nd run.....gal.	.47	.47
Pine Tar—		
Kiln Burnt.....Bbl.	12.00	12.00
Retort.....Bbl.	11.50	11.50

†Savannah, Ga. market.
*Nominal.

Sulfuric Acid Is Heavily And Moving Strong

By Special Correspondent

NEW YORK, Jan. 12.—Following is a review of the markets for oils and supplies used in compounding and refining:

Sulfuric Acid

Demand more spasmodic but heavy movement on contract is keeping prices steady. Stocks moderate.

Caustic Soda

Better export demand. Drastic buying slightly lighter. Prices holding up firm stocks moderate.

Bleaching Powder

Good steady demand, and prices are trifle firmer. Buyers more inclined to anticipate spring requirements.

Sulphuric Acid

Heavy deliveries against contracts. Buyers purchasing freely. Prices buoyant. Production gaining.

Linseed Oil

Demand much better but crushers are reluctant sellers. No price fluctuations of consequence reflecting steady tone in flaxseed. Spot oil still $1.15 per gallon, carlots cooperage basis.

Animal Oils

Generally easier although reductions chiefly from ¼ to ½ cent a pound and no violent fluctuations developed. Neatsfoot oil demand better. Lard oil weak, as buyers hold off. Degras flat but steady. Stearine down ¼ cent.

Fish Oils

Prices holding up fairly well. Crude menhaden unchanged at 55 to 58 cents a gallon, in carlots, cooperage basis. Light pressed and white bleached oils in better demand. Sperm oil marking time at unchanged prices.

Naval Stores

Stronger. Both turpentine and rosin are higher, reflecting advances at primary markets. Receipts in the south declining sharply. Pitch and tar in better demand. Rosin oils quiet but firm.

OIL STOCKS AND FINANCES

Imperial Oil, Ltd., Plans To Split Stock

TORONTO, ONT., Jan. 10.—Special meeting of stockholders of Imperial Oil, Ltd., has been called to be held Jan. 14 in Toronto. A proposal will be voted on to convert the existing stock with par value of $25 per share into common stock without par value on a basis of four shares of new for each existing share issued and unissued.

The company which is controlled by the Standard Oil Co. of New Jersey, has outstanding $39,605,225 of stock out of $50,000,000 authorized.

Mutual To Change Name To Continental

NEW YORK, Jan. 9.—Stockholders of the Mutual Oil Co. have been called to a special meeting to be held Jan. 27 in Portland, Me., to ratify changing the name of the company to the Continental Oil Co. and changing the par value of the stock from $5 to $10 per share. If the change is made one share of the $10 Continental stock will be exchanged for two shares of the present Mutual stock.

The change in name has been decided on by the Mutual directors in order to tie up more completely the name of the company with that of its products, "Conoco," which have been familiar throughout the Rocky Mountain territory for many years.

The Mutual is the consolidation of the Continental, formerly a Standard Oil subsidiary, and the Mutual Oil Co. which now holds approximately 99 per cent of the old Continental stock.

According to a statement issued by the Mutual, the Continental and Mutual Oil companies combined maintain more than 1000 service and distributing stations in Montana, New Mexico, Utah, Idaho, Wyoming, Colorado, Kansas, Nebraska and South Dakota. They have a daily production of 17,000 barrels of crude oil, and 1040 tank cars and 20,000 barrels of refining capacity at its plants located at Glenrock and Cowley, Wyo.; Florence, Col.; Chanute, Kan., and Sapulpa, Okla.

The consolidated balance sheet of the two companies as of June 30, 1924, the latest date for which official figures are available, showed assets of $71,103,495 after write-offs of more than $8,500.000 due to revaluation of the properties of the Continental when the latter company was taken over by Mutual. Current assets at that time were $21,037,347 and current liabilities $6,010,554. The assets included $3,305,476 cash, $2,185,457 government securities, $477,035 notes receivable, $5,974,901 accounts receivable and inventory valued at $9,904,476. Properties and other fixed assets were valued at $46,837,932 after $28,552,732 reserves for depletion, depreciation and revaluation of assets.

Cleveland Stock Market

January 9

	Par	Bid	Asked	1923 High	1923 Low
Canfield Oil Co.	$100	.....	.....	.....	.....
do pfd.	100	.....	100	100	95
Fred G. Clark Co.	10	3	3½	4	2
National Refin. Co.	25	41	45	39	33¾
do pfd.	100	.....	.....	127¼	116
Paragon Refin. Co.	25	5½	6¾	6	5¼
do pfd.	100	40	.....	75	40

x—Ex dividend

Oil Dividends

	Amount	Payable	Stock of Record
Eureka Pipe Line q.	$1	Feb. 2	Jan. 15
Salt Creek Prod. q.	20c	Feb. 2	Jan. 16
do extra	30c	Feb. 2	Jan. 16
Shell Trading	95c	Jan. 24	Jan. 15
Shell Union pfd. q.	$1.50	Feb. 15	Jan. 26
Union of Calif. q.	45c	Feb. 10	Jan. 16
Wilcox O. & G. q.	10c	Feb. 5	Jan. 15

Financial Notes

Penn Mex Fuel Co.—Reports in financial circles are to the effect that this subsidiary of the South Penn Oil Co. will soon declare a dividend.

South West Pennsylvania Pipe Lines.—Annual meeting will be held Jan. 21 in Oil City, Pa.

Eureka Pipe Line Co.—Annual meeting will be held Jan. 22 in Oil City, Pa.

Pittsburgh Oil & Gas Co.—This Barnsdall controlled company will declare a dividend this month, according to reports.

Shell Transport & Trading Co.—Dividend of 2 shillings declared on stock is equivalent to 95 cents per share on the American shares. The dividend is payable Jan. 24.

Louisiana Oil Refining Corp.—Temporary certificates for common stock of no par value listed on New York Stock Exchange. Stock of Invincible Oil Corp. stricken from exchange list Jan. 13.

Culbertson Co. Dissolves

WARREN, PA., Jan. 9.—D. H. Culbertson is engaging in a general marketing business with offices in the Warren Savings Bank Bldg., due to the recent dissolution of D. H. Culbertson & Co. W. L. Baumbach, formerly with the old company, remains as sales manager with Mr. Culbertson.

Texas Co. Organizes New Subsidiary

NEW YORK, Jan. 8.—The Texas Co. has organized a subsidiary styled the Texas Petroleum Co. of New Jersey which is to act as an exploring and producing company in South America. The new corporation has an authorized capital of $1,000,000 but only half of that amount of stock will be issued at present. Present activities of the new company will be confined to Venezuela, it is said.

Barnsdall Corp. Greatly Increases Income

NEW YORK, Jan. 10.—Barnsdall Corp. and subsidiary companies will close 1924 with net earnings of approximately $1,250,000 after all charges including taxes, interest, depletion and depreciation as against net earnings of $181,848 in 1923, President Robert Law, Jr., has written stockholders.

The corporation has reduced its funded debt from $12,555,000 in 1921 to $6,408,500 and are making effort to put the corporation on a basis where dividend payments may be resumed, Mr. Law announced.

The company in California brought in this month a 1000-barrel well on its Rosecrans property and one of 2700 barrels of 42 gravity oil on the O'Dea property. Locations for many additional wells have been proven, Mr. Law says. The company's first six wells in the Rosecrans field which in May was making 700 barrels per day is now making 500 barrels, Mr. Law reports.

British-American Pays Bonus

TORONTO, ONT., Jan. 10.—Stockholders of the British-American Oil Co. are receiving a bonus for 1924. This is being mailed out with the regular dividend check. A statement from the company says that in spite of unfavorable conditions last year the excessive competition in the oil industry, through intensified efficiency and the opening of new branches, it increased its business satisfactorily.

TULSA, Jan. 10.—The Randolph Petroleum Co., petroleum marketers of this city, opened at Chicago on Jan. 1. The new offices are at 1029 McCormick Bldg. Robert N. McNeilly, formerly with the American Oil Corp., is in charge of the new sales offices.

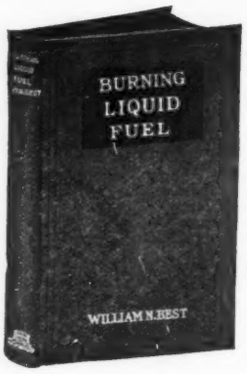
Transactions In Oil Shares on New York Stock Exchange

1923 High	1923 Low	1924 High	1924 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions week ended Jan. 10 Sales	First	High	Low	Last	Ch'ge
.....	.....	46¾	25	(sh) 200,000	N.P.	American Republics	.....	.....	1,500	48½	58	48	58	+11
29⅛	24⅞	34⅜	27½	$ 56,000,000	$25	Associated Oil	87½cQ	Oct. 25, 24	25,500	34¼	34½	33	34	+ ¼
160	98¾	140½	78½	50,000,000	100	Atlantic Refining	.....	June 16, 24	20,500	100½	110½	99¾	109½	+9⅜
120	115	118	108	20,000,000	100	do pfd	$1¾Q	Nov. 1, 24	200	114¾	114¾	114¾	114¾	+ ¾
35	9⅞	21⅝	14	13,000,000	25	Barnsdall Corp. A	.....	Apr. 30, 21	25,900	24⅛	24½	22	22¾	—1½
22	6	16¼	10	3,718,275	25	do B	.....	Apr. 30, 21	4,000	19⅝	19¾	18	18½	—1⅜
9¼	1¾	4¼	1	(sh) 150,000	N.P.	Caddo Central O. & R	.....	.....	300	1½	1½	1⅜	1¾	+ ¼
29¾	17⅛	29¼	19½	$ 17,377,000	$25	California Petroleum	43¾cQ	Dec. 1, 24	84,300	26¾	27⅝	25⅝	27	+ ⅜
110½	90½	107	92½	11,955,100	100	do pfd	$1¾Q	Jan. 2, 25	7,000	102¾	105⅞	101¾	105¾	+3¾
62¼	22¾	40¾	22⅝	(sh) 1,357,800	N.P.	Cosden & Co	.....	Aug. 1, 23	58,600	28¾	29⅜	27⅛	28⅞	+ ¾
90¾	83¾	95	80	$ 6,998,000	$100	do pfd	$1¾Q	Dec. 1, 24	600	84½	86	84½	86	+2½
54	23	50¾	31¾	19,831,000	100	General Asphalt Co	.....	.....	32,200	61¾	61¾	57¾	60⅝	— ⅜
83	60	96	71½	7,416,000	100	do pfd	$1¾Q	Dec. 1, 24	900	95½	99	95½	97½	—2¼
.....	.....	45	38¾	28,856,050	25	General Petroleum	50cQ	Dec. 15, 24	21,800	43⅝	43⅝	42¼	43	— ⅜
78	40¾	82½	61	25,000,000	100	Houston Oil Co	.....	.....	14,700	81¾	81¾	77½	79⅜	—1⅞
11¾	3⅜	13⅜	5¾	(sh) 450,000	N.P.	Independent Oil & Gas	25cQ	Dec. 31, 24	59,600	15¾	16¾	13½	16¾	+1⅜
8½	3½	7½	3¾	7,830,450	10	Indian Refining Co	.....	Dec. 15, 20	4,800	6⅜	6⅝	6	6⅜	+ ⅜
49½	49½	75	60	2,296,400	100	do pfd	.....	Dec. 15, 21	300	80	95	80	95	+15
19¼	7⅜	16⅞	10½	1,094,236	N.P.	Invincible Oil Corp	.....	.....	19,100	16⅞	22⅜	16	21⅜	+4⅜
3½	¾	1	¾	$ 1,697,610	$10	Kansas & Gulf Corp	.....	.....	900	¾	¾	⅝	¾	+ ⅛
.....	.....	.....	.....	1,098,148	N.P.	Louisiana Oil Refining	.....	.....	20,900	16¾	22½	16¾	21⅜	0
28¾	16	37½	24¾	(sh) 268,850	N.P.	Maracaibo Oil	.....	.....	5,900	29	29¼	27⅜	28	—1
59⅜	17⅛	42	29	(sh) 1,549,190	N.P.	Marland Oil Co	.....	July 1, 23	12,400	39¾	40½	38¾	40¼	+ ⅜
293	182	190	190	$ 45,942,800	$100	Mexican Petroleum Co	$3Q	Oct. 20, 24	.....	.....	.....	.....	.....	.....
105¼	100¼	.....	.....	12,000,000	$100	do pfd	$2Q	Oct. 20, 24	.....	.....	.....	.....	.....	.....
23¾	5¾	25¾	14⅛	(sh) 945,939	N.P.	Mexican Seaboard Oil	50cQ	Nov. 15, 24	46,600	22	22½	20½	20¾	—1¼
12¼	3½	6⅞	1	$ 29,799,450	$10	Middle States Oil Corp	.....	July 1, 23	7,700	1¼	1⅜	⅜	⅜	+ ¼
52⅛	31¼	58¾	45	(sh) 3,500,000	N.P.	Pacific Oil Co	$1S.A.	July 21, 24	84,500	55½	56	53¾	55½	0
93⅛	53	65	42¾	$ 48,292,450	$50	Pan American P. & T	$1Q	Oct. 20, 24	26,200	67	67	64⅛	65¾	—1
86	50½	64⅜	41½	83,221,500	50	do Class B	$1Q	Oct. 20, 21	134,400	66¾	66½	63⅜	65⅜	—1⅛
6¼	1¼	4	1⅜	(sh) 198,770	N.P.	Panhandle P. & R	.....	.....	1,900	3	3¼	3	3⅛	+ ⅛
68	27½	42½	29¾	$ 3,855,500	$100	do pfd	.....	July 2, 23	.....	.....	.....	.....	.....	.....
69⅝	19¾	42¾	28½	(sh) 1,849,848	N.P.	Phillips Petroleum	50cQ	Jan. 2, 25	83,300	38⅛	38⅜	36⅝	38⅛	0
6	1¾	4½	1½	$ 29,622,925	$25	Pierce Oil Corp	.....	.....	9,300	1⅞	2	1¾	2	+ ⅛
44½	16	39¾	20	15,000,000	100	do pfd	.....	Feb. 1, 22	7,700	27	30⅝	26⅜	30	+3¼
58⅜	17	43½	22¾	11,467,850	50	Producers & Refiners	.....	Sept. 15, 23	3,600	29½	29½	27¾	29	— ⅜
49¾	36	47⅜	22	2,845,350	50	do pfd	87½cQ	Nov. 3, 24	200	43½	44	43½	44	+ ½
32	16¼	30	20	71,316,575	25	Pure Oil Co	37½cQ	Dec. 1, 24	37,400	30½	30⅝	29¼	30	— ⅜
100	82½	105¼	92	13,000,000	100	do 8% pfd	$2Q	Jan. 2, 25	700	104¾	105½	104½	104½	— ⅜
53⅜	40½	59½	40¾	(sh) 727,550	13.40	Royal Dutch, N. Y. shares	$3.18½	Aug. 12, 24	20,700	53¾	54½	52¼	53⅝	— ⅜
41¼	29⅝	41½	33	(sh) 141,395	£2	Shell Transport & T	$1.07½	July 23, 24	600	43¼	43¼	42½	42¾	— ¼
19¼	12⅜	22	15¾	(sh) 10,000,000	N.P.	Shell Union Oil Corp	25cQ	Dec. 31, 24	51,800	23¾	23⅞	22½	23½	— ⅛
95	89½	99	91½	$ 20,000,000	$100	do pfd	$1½Q	Nov. 15 24	300	99½	100	99½	99¾	— ¼
16	6½	20	10⅜	7,204,710	10	Simms Petroleum Co	50Q	Jan. 2, 25	57,000	23⅞	26	22½	25⅞	+2⅛
39⅜	16	27⅜	15	(sh) 4,480,957	N.P.	Sinclair Consolidated	.....	May 31, 24	60,200	17¾	18	17	18	+ ¼
99⅜	80¼	88½	75	$ 18,914,900	$100	do pfd	$2Q	Nov. 15, 24	1,200	79½	82½	79	82½	+3½
35	12⅛	29	17⅛	20,579,090	25	Skelly Oil Co	.....	.....	25,100	25½	26	24⅛	24¼	—1⅛
64½	47¾	68½	55½	234,317,800	25	S. O. California	50cQ	Dec. 15, 24	32,600	63¾	64¼	62⅜	63⅝	— ⅜
44⅛	30⅞	42¼	38	506,051,775	25	S. O. New Jersey	25cQ	Dec. 15, 24	89,200	42	42⅛	40⅞	41⅞	0
118¼	114¾	119⅛	115⅞	199,972,900	100	do pfd	$1¾Q	Dec. 15, 24	3,400	117⅝	117¾	117⅛	117¾	0
6¾	2	8⅛	2⅜	(sh) 1,087,228	N.P.	Superior Oil Corp	.....	Dec. 20, 20	13,200	5⅜	5⅝	5	5¼	— ⅛
52⅞	34⅝	45⅜	37¾	$164,450,000	$25	The Texas Co	75cQ	Dec. 31, 24	31,300	43⅜	44¼	42¾	43⅞	+1⅛
24¾	5½	15¼	8	8,380,340	10	Texas Pacific Coal & Oil	.....	June 30, 23	45,200	12⅛	15	11½	14½	+2⅜
144	94	151	118¼	50,004,000	100	Tide Water Oil Co	$1Q	Dec. 31, 24	3,000	136¾	136¾	130⅜	135	—1
14½	1¼	6¼	3¾	(sh) 2,957,529	N.P.	Transcontinental Oil Co	.....	.....	42,000	4⅛	5¼	3⅞	5¼	+1¼
.....	.....	89	55	$ 40,480,800	$25	Union Oil of California	45cQ	Oct. 28, 24	66,000	39	39⅜	37⅜	38½	— ½
99¾	81	129	94	$ 18,040,000	$100	Union Tank Car Co	$1¼W	Dec. 1, 24	200	122	124	122	124	+3
114	100	116¾	106¼	12,000,000	100	do pfd	$1¾Q	Dec. 1, 24	300	114	115	114	115	+1
30⅜	20	29⅜	23¾	(sh) 460,000	N.P.	White Eagle Oil & Ref	50cQ	Oct. 20, 24	27,800	28⅞	29⅞	28⅛	29¼	+ ¼

*New High †New Low xEx-Dividend Total Sales 1,436,500

Standard Oil Stock Traded In New York Curb Market

1923 High	1923 Low	1924 High	1924 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions week ended Jan. 9 Sales	First	High	Low	Last	Ch'ge
19¾	13½	19¼	14¾	£3,000,000	£1	Anglo American	55cS.A.	May, 15, 24	9,900	19	19⅛	18¾	18⅞	0
7⅞	2½	4⅞	2¾	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	2,800	3	4	3	3½	+ ⅜
150	108	265	155	$ 1,000,000	$100	Borne-Scrymser	$4S.A.	Oct. 15, 24	30	235	235	235	235	—5
94½	69	85½	51	10,000,000	50	Buckeye Pipe Line	$1Q	Dec. 15, 24	600	62½	65	62	65	+3
.....	.....	52	47½	3,000,000	25	Chesebrough Mfg. Co	62½cQ	Dec. 20, 24	400	48¾	48¾	48¼	48¾	0
118	110	115	112½	1,000,000	100	do pfd	$1¾Q	Dec. 20, 24	.....	.....	.....	.....	.....	.....
50	32¼	54⅞	39¾	10,000,000	25	Continental Oil	50cQ	Dec. 15, 24	12,400	.....	27¼	25½	27¼	.....
47½	15	20	11¼	1,500,000	25	Crescent Pipe Line	.....	Sept. 15, 23	.....	.....	.....	.....	.....	.....
168	85	149	110½	3,000,000	100	Cumberland Pipe Line	$3Q	Dec. 15, 24	60	138	140	138	140	+4½
117	87	105	77	5,000,000	100	Eureka Pipe Line	$2Q	Oct. 31, 24	220	86	90	86	88	+3
78	55	69¾	52	16,000,000	100	Galena Signal Oil	$1Q	Dec. 31, 24	620	57	58½	56¾	57¾	+ ¾
105¾	104	106	100½	4,000,000	100	do new pfd	$2Q	Dec. 31, 24	.....	.....	.....	.....	.....	.....
116	108	116	103½	2,000,000	100	do old pfd	$2Q	Dec. 31, 24	.....	.....	.....	.....	.....	.....
41¾	28	43¾	30	43,750,000	25	Humble Oil & Ref	30cQ	Jan. 1, 25	11,300	42¾	43⅝	42¼	43½	+ ⅜
171	115	161	120	20,000,000	100	Illinois Pipe Line	$6S.A.	Dec. 30, 24	450	128	140½	128	140½	+12½
123	92	119	98½	39,222,750	25	Imperial Oil Coupons	75cQ	Dec. 1, 24	6,700	121¾	124	121	121	— ¾
103	78	100	66	5,000,000	50	Indiana Pipe Line	$2Q	Nov. 15, 24	680	75	78	75	78	+5
24¾	13¼	24	16¾	(sh) 7,118,138	N.P.	International Petroleum	25c	Nov. 29, 24	57,200	24⅜	24¾	23¼	24¼	+ ⅛
168	123	162	122	$188,000,000	100	Magnolia Petroleum	$1Q	Jan. 5, 25	970	137	144	137	142	+5
29	19¼	25⅞	20⅝	6,362,500	12½	National Transit	50cQ	Dec. 15, 24	900	23½	23½	23	23½	+ ½
138	70	97	54½	5,000,000	100	New York Transit	50cQ	Jan. 15, 25	430	67	70	67	68½	+3
109½	90	107½	72	4,000,000	100	Northern Pipe Line	$3S.A.	Jan. 1, 25	390	82¾	83½	81½	83	0
85¾	48¾	79½	53	60,000,000	25	Ohio Oil Co	50cQ	Dec. 31, 24	8,400	66	68⅛	65	68	+3
45¾	10½	43	27	10,000,000	25	Penn.-Mex. Fuel	.....	.....	2,000	37	39	36½	38½	+1½
700	152	269	193	60,000,000	100	Prairie Oil & Gas	$2Q	Oct. 31, 24	7,680	215	227	211	225	+11
335	93	111	100	81,000,000	100	Prairie Pipe Line	$2Q	Oct. 31, 24	3,200	107	108	106	108	+1½
212½	161	230	175	4,000,000	100	Solar Refining Co	$5S.A.	Dec. 20, 24	340	207	214	200	212	+10
116	87	100	80¾	10,000,000	100	Southern Pipe Line Co	$2Q	Dec. 1, 24	250	92	94	92	94	+2
195	100	171	117	20,000,000	100	South Penn Oil Co	.....	Sept. 30, 22	2,450	142	157½	140	156½	+16½
88¼	66½	89	69	3,500,000	100	Southwest Pa. Pipe Lines	$1Q	Dec. 31, 24	120	77½	80	77	80	+3½
69¾	49¼	68¾	54¼	221,706,668	25	S. O. Indiana	62½cQ	Dec. 15, 24	115,900	62⅞	64	62¼	63¾	+ ¾
57½	36½	50¼	32½	8,000,000	25	S. O. Kansas	.....	June 16, 24	6,300	37¾	40	37	39¾	+2
133	80	120	101	16,784,047	25	S. O. Kentucky	$1Q	Dec. 31, 24	3,400	119½	120	117½	120	+1¼
285	186	262	198	3,000,000	100	S. O. Nebraska	$5S.A.	Dec 20, 24	300	250	252	244	241	—6
48¾	35⅛	53¾	37¾	225,324,650	25	S. O. New York	35cQ	Dec. 15, 24	25,700	44⅞	45¾	44¼	45½	+ ⅜
320	270	377½	275	14,000,000	100	S. O. Ohio	$2½Q	Jan. 1, 25	200	349½	350	338	350	0
118	116	125½	115	7,000,000	100	do pfd	$1¾Q	Dec. 1, 24	30	118	118	117½	117½	— ½
889	21	81	22	1,722,931	100	Swan & Finch	.....	Nov. 1, 19	70	23	23	23	23	0
53¾	35½	83⅛	56½	61,523,075	25	Vacuum Oil Co	50cQ	Dec. 20, 24	12,800	81⅞	82¾	80¾	82¼	+ ½
28	19	30	25½	100,000	10	Washington Oil Co	.....	Jan. 31, 22	20	30½	30½	30	30	— ½



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New York Curb Bonds

Week Ended Jan. 9, 1925

	High	Low	Last	Ch'ge
Anglo-Amer. 7½s	100⅝	102¾	103¼	+ ¼
Cities Service 7s B	151	150½	151	+6
do 7s C	111⅝	111	111⅝	+ ⅜
do 7s D	99½	99	99½	0
Galena S. O. 7s	105	104¾	105	0
Gen. Petr. 6s	100¾	100½	100¾	+ ¼
Gulf Oil 5s	98¾	98⅝	98¾	+ ⅛
do 5½s '26	102½	101¾	101¼	0
Pennok Oil 6s	97⅛	97	97	0
Phillips Petr. 7½ w w	104	103½	104	0
Pure Oil 6½s	99	98	98¾	— ½
Sinclair Con Oil 6s w i	102¾	99½	102½	+3⅛
S.O.N.Y. do 6½s	107¼	106⅞	107⅛	+ ⅛
Sun Oil 5½s	97	95⅜	97	+1¾
Tidal Osage 7s	103¾	103	103	0
Union Oil Calif. 6s '25	101	101	101	+ ⅜
Vacuum Oil 7s	107½	106⅞	107	— ¼

New York Bonds

Week Ended Jan. 10, 1925

	High	Low	Last	Ch'ge
Atlantic Refg debs 5	98¾	98¼	98¾	+ ½
Barnsdall Corp 8s	104	102⅞	104	+ ¾
Calif. Petroleum sf 6½	102	101	102	+1
Empire G & F 7½s	98½	96⅞	98½	+ ½
Humbles O & R 5½s	100	99½	100	0
Marland 8s ser A	106⅛	106⅛	106⅛	+ ⅛
Marland Oil 8s with war	135	130¼	135	0
do 7½ ser B	105⅜	105⅜	105⅜	0
do 7½ with war	127	127	127	—2
Pan Amer Pet & Trans Co. 6s	106¼	104	105¾	+1¼
do 7s	105	105	105	+ ⅛
Pierce Oil debs 8s	103½	102⅝	103⅜	— ⅛
Producers & Refiners 8s	110	110	110	0
Sinclair Con. col 7s	91¾	88¼	91¾	+3½
do 6½s	84⅞	82⅝	84⅞	+1⅜
Sinclair crude 6s	100⅝	99¾	100¼	+ ⅜
do 5½s	100	99¾	100	+ ⅛
Sinclair P L sf 5s	83	82	83	+ ⅞
Skelly Oil 6½s	110½	106⅞	109½	+ ½
Tidewater Oil 6½s	103½	102½	103½	+ ¾
Union Oil of Calif. 6s	102¾	102⅜	102¾	— ⅛
Union Tank Car 7s	104⅞	104	104	— ⅛

New York Curb Market

1923 High	1923 Low	1924 High	1924 Low	Par Value	Stocks	Transactions Week Ended Jan. 9 Sales	First	High	Low	Last	Ch'ge
10	4¼	7	4	10	Ark. Nat. Gas	1,200	5⅝	6	5½	6	+ ⅜
1½	.65	1⅛	.75	1	Boston & Wyo.	.....	.....	.....	.....	.....	.....
7¾	3⅛	6¾	2¾	25c	Carib. Synd.	1,300	3¾	3¾	3⅝	3¾	0
195	128	190	132	100	Cities Service	1,746	177	178	176½	177⅛	+ ½
70	64¼	82⅞	67¾	100	do pfd.	1,500	80¾	81	80½	80⅞	0
6¾	5⅞	7¾	6⅛	10	do pfd. B	1,200	7½	7⅝	7½	7½	0
19½	12⅝	19	13¼	10	do Bkrs. Sh	3,200	17¾	18	17⅝	18	+ ⅜
7⅜	1⅝	10⅝	2⅜	N.P.	Creole Synd.	24,500	9⅝	9¾	8¼	8⅞	—1
18½	5	8	5	N.P.	Derby O. & R.	500	4½	5	4½	5	+ ½
49½	22	34¼	17½	N.P.	do pfd.	.....	.....	.....	.....	.....	.....
1	.10	.60	.12	5	Federal Oil	.....	.....	.....	.....	.....	.....
2¼	.23	.60	.15	10	Glenrock Oil	.....	.....	.....	.....	.....	.....
68¾	45¾	67⅞	56¾	25	Gulf Oil Corp.	12,500	66⅞	67¾	66	67½	+ ⅜
9⅜	1	2⅝	.87	N.P.	Gulf State O.& R.	.....	.....	.....	.....	.....	.....
4	1¼	7	1¼	N.P.	Kirby Petroleum	19,600	5⅜	5⅝	4½	4½	— ⅞
.....	.....	6¾	2⅞	N.P.	Lago Petroleum	80,800	6⅜	6⅛	5⅛	6⅛	+ ⅛
5⅛	1⅝	4⅞	1⅝	N.P.	Marland of Mexico	1,300	2	2	1¾	1¾	— ⅛
20¾	12⅞	20¾	16	10	Mountain Prod.	18,200	18¾	19⅞	18⅝	19⅞	+1⅜
15¼	12⅜	.....	.....	5	Mutual Oil Co.	.....	.....	.....	.....	.....	.....
15½	8⅛	14	9⅜	5	do cfts	221,600	12⅛	13¾	12⅛	13¾	+1½
6⅛	3½	6¾	3⅝	5	New Bradford	1,400	3⅞	4¾	3¾	4¾	+1⅛
52	15⅛	44	18⅝	10	New England Fuel	600	.....	25¾	20½	21¾	— ⅛
21⅜	5	14	8⅛	25	New York Oil	500	.....	9	8½	9	+ ½
1 1/16	.45	.80	.50	10	Omar O. & G	.....	.....	.....	.....	.....	.....
13	¾	3½	.90	N.P.	Peer Oil Corp	7,000	1⅜	1½	1¼	1½	+ ⅛
14¾	9¼	17¾	12¼	10	Pennok Oil	2,900	19	19	18	18½	— ¾
.....	.....	57¾	5¾	25	Red Bank Oil	3,900	24⅞	28½	24⅞	28	+5
6⅞	⅞	5⅛	3⅜	N.P.	Ryan Consolidated	300	.....	3¾	3½	3⅝	— ⅛
14	6¾	10⅝	6	10	Salt Creek Cons	1,600	6¾	7	6½	7	+ ½
25¾	15¾	27½	19⅛	10	Salt Creek Prod.	14,900	24¼	26	24	26	+1¾
4⅞	.75	2½	.80	5	Sapulpa Refining	300	.....	1¾	1 1/16	1¾	+ 1/16
4	.65	1½	.30	5	Seaboard O. & G.	.....	.....	.....	.....	.....	.....
13½	6	16	8	10	Tidal Osage	1,000	10	10	10	10	+2⅛
.....	.....	154	130¼	100	Union of California	.....	.....	.....	.....	.....	.....
10⅞	4	8¾	4⅝	5	Wilcox O. & G.	13,500	6	6	5¾	5¾	— ⅜
.....	.....	13⅜	5	N.P.	Woodley Petroleum	1,800	.....	6¼	5½	6	+ ¼

Pittsburgh Stock Exchange

1923 High	1923 Low	1924 High	1924 Low	Par Value	Stocks	Transactions Week Ended Jan. 9 Sales	First	High	Low	Last	Ch'ge
10	4¼	7	4	10	Ark. Nat. Gas	5,060	5⅞	6	5⅝	6	+ ⅛
33⅜	33	40½	35¾	N.P.	Columbia Gas	.....	.....	.....	.....	.....	.....
.....	.....	30	30	25	Fayette County Gas	.....	.....	.....	.....	.....	.....
27	22¾	33¼	26½	25	Lone Star Gas	1,832	32½	33	32½	32¾	+ ¼
58	51	60¾	51	50	Manuf. L. & H.	.....	.....	.....	.....	.....	.....
.....	.....	33¼	28½	25	Ohio Fuel Corp	6,457	32⅛	32¼	32	32⅛	0
19	11	16½	11⅛	1	Ohio Fuel Oil	1,425	14½	15	14	14⅞	+ ⅜
66	30¾	40¾	31½	25	Ohio Fuel Supply	.....	.....	.....	.....	.....	.....
24	18⅝	28½	22¾	25	Okla. Nat. Gas	1,410	26⅜	27½	26	27½	+1
10½	5¾	9¾	6	5	Pittsburgh O. & G.	1,750	8⅜	8½	8	8	— ⅜
14	5½	10½	6	10	Salt Creek Cons.	2,825	6⅝	7⅜	6½	7¼	+ ¾
13½	7	16½	9	10	Tidal Osage	835	8¼	10⅜	8¼	10½	+1½
.....	.....	92	92	100	do pfd	.....	.....	.....	.....	.....	.....
29½	23¾	35½	27¾	25	Union Nat. Gas	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....

Pittsburgh Curb Market

1923 High	1923 Low	1924 High	1924 Low	Par Value	Stocks	Transactions Week Ended Jan. 9 Sales	First	High	Low	Last	Ch'ge
.....	.....	2½	2½	N.P.	Arkansas Fuel w.i.	.....	.....	.....	.....	.....	.....
.....	.....	14	14	25	Barnsdall B	.....	.....	.....	.....	.....	.....
1½	.22	.87	.20	5	Colombia Synd.	1,000	.60	.60	.60	.60	0
2⅜	.26	.70	.25	5	Duquesne Oil	400	.20	.20	.20	.20	0
37	10	9⅜	5¼	10	Forest Oil	.....	.....	.....	.....	.....	.....
1¼	1	.15	.15	1	Grant Oil	.....	.....	.....	.....	.....	.....
68	46½	66½	57	25	Gulf Oil Corp	2,310	66½	67½	66½	67	+1
24½	16⅜	23¾	21	N.P.	International Pet	.....	.....	.....	.....	.....	.....
.....	.....	4½	4½	N.P.	Lago Petroleum	.....	.....	.....	.....	.....	.....
.....	.....	66	64½	50	Manuf. L. & H.	.....	.....	.....	.....	.....	.....
8½	4	6	5	10	Marshall Oil	.....	.....	.....	.....	.....	.....
.36	.15	.39	.01	1	Mex. Wyoming	.....	.....	.....	.....	.....	.....
.....	.....	18	18	10	Mountain Prod.	.....	.....	.....	.....	.....	.....
.....	.....	30	29½	$25	Ohio Fuel Corp	.....	.....	.....	.....	.....	.....
.....	.....	41¾	40	25	Ohio Fuel Supply	42	20	20	20	20	0
2½	1⅜	2⅞	1⅜	1	Oklahoma Eastern	1,900	2½	2½	2⅜	2⅜	— ⅛
2	.60	.77	.45	10	Omar O. & G.	2,000	.40	.40	.40	.40	0
.....	.....	126	126	100	South Penn. Oil	.....	.....	.....	.....	.....	.....
22½	7	8	3	5	States Oil	272	3	3	3	3	0
.....	.....	14	10	10	Tidal-Osage, N. Y.	.....	.....	.....	.....	.....	.....

*New High †New Low x Ex Dividend